

Department of Navy
SBIR BAA# NX191
Direct to Phase II
Accelerated Delivery and
Acquisition of Prototype
Technologies (ADAPT)

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See page 22 of this BAA on instructions for
submission of questions.

DON ADAPT SBIR BAA
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1) Program Description

a) Accelerated Delivery and Acquisition of Prototype Technologies (ADAPT) SBIR BAA

This BAA is designed to quickly address DON high priority challenges in high impact areas for the naval community that are also determined to have potential solutions and dual use applications in the commercial sector. As a result, it is viewed as highly likely that a significant number of non-traditional businesses may have existing technologies of interest in the areas covered in this BAA. The DON can benefit from the increased innovation and participation of non-traditional businesses and seeks to leverage existing commercial technologies to accelerate the time to deliver prototype technologies. In order to take advantage of these acceleration opportunities as well as attract small non-traditional businesses that may not have done business with the federal government before, this BAA is utilizing a different approach to funding awards, accelerating decision timelines, minimizing to the extent possible application requirements and proposal processes, and otherwise removing commonly cited “barriers to entry.”

The executing office for this BAA is the Office of Naval Research (ONR). ONR will provide the overall ADAPT Program Management; the Technical Points of Contact (TPOC) to manage the topics and serve as technical managers for any resulting funding agreements; and the acquisition personnel responsible for procurement and the resulting funding agreements.

Potential applicants are encouraged to read this BAA in its entirety as the requirements herein deviate significantly from other SBIR BAAs issued by DoD and the DON in the past. We also encourage those who are interested to attend the free ADAPT Workshop in Lowell, MA on April 10-11, 2019. For more information, go to <https://www.onlineregistrationcenter.com/ADAPT>.

b) SBIR Three Phase Program

The SBIR Program is a three-phase program. Phase I is to determine, to the extent possible, the scientific, technical, and commercial merit and feasibility of ideas submitted under the SBIR Program. Phase I awards are typically between \$100,000 and \$225,000 for DON. The period of performance is generally between six to twelve months with twelve months being the maximum period allowable. Proposals should concentrate on research or research and development (R/R&D) that will significantly contribute to proving the scientific and technical feasibility, and commercialization potential of the proposed effort, the successful completion of which is a prerequisite for further DoD support in Phase II. Proposers are encouraged to consider whether the R/R&D being proposed to DoD components also has private sector potential, either for the proposed application or as a base for other applications.

Phase II awards are made to firms based on the results of their Phase I effort and/or the scientific merit, technical merit, and commercialization potential of the Phase II proposal. Phase II awards are typically \$500,000 to \$1,500,000 in size and the period of performance is generally 24 months. Phase II is the principal R/R&D effort and is expected to produce a well-defined deliverable prototype. A Phase II contractor may receive up to one additional, sequential Phase II award for continued work on the project.

SBIR Phase III refers to work that derives from, extends, or completes an effort made under prior SBIR funding agreements, but is funded by sources other than the SBIR Program – either the private

sector, a non-SBIR government source, or both. Phase III work is typically oriented towards commercialization of SBIR research or technology. The proposer is required to obtain funding to develop the prototype into a viable product or non-R&D service for sale in military or private sector markets.

c) Direct to Phase II (DP2)

During government fiscal years (FY) 2012 through 2022, the Department of Defense (DoD) including the Department of Navy (DON) may issue a Phase II award to a small business concern that did not receive a Phase I award for that R/R&D. Prior to such an award, the head of the agency, or their designee, must issue a written determination that the small business has demonstrated the scientific and technical merit and feasibility of the technology solution that appears to have commercial potential (for use by the government or in the public sector). The determination must be submitted to Small Business Administration (SBA) prior to issuing the Phase II award. This BAA is being issued in accordance with the requirements of the DP2 authority. Only those small business concerns (SBCs) that are capable of meeting DP2 proposal requirements may participate in this BAA. No Phase I awards will be issued.

d) SBIR Eligibility

In order to participate in the SBIR program, the proposing firm must meet certain eligibility criteria prior to award. For Phase II awards, the SBC must meet the following:

- i) Is in the legal form of an individual proprietorship, partnership, limited liability company, corporation, joint venture, association, trust or cooperative, except that if the concern is a joint venture it is more than 50% directly owned and controlled by one or more individuals (who are citizens or permanent resident aliens of the United States), other small business concerns (each of which is more than 50% directly owned and controlled by individuals who are citizens or permanent resident aliens of the United States), or any combination of these. Otherwise, Section ii) below applies.
- ii) A concern that is more than 50% owned by multiple venture capital operating companies, hedge funds, private equity firms, or any combination of these (see paragraph g. below for more information if this is the case). No single venture capital operating company, hedge fund, or private equity firm may own more than 50% of the concern unless that single venture capital operating company, hedge fund, or private equity firm qualifies as a small business concern that is more than 50% directly owned and controlled by individuals who are citizens or permanent resident aliens of the United States.
- iii) Qualifies as a small business having, including its affiliates, not more than 500 employees in accordance with the Small Business Act, U.S.C. §121.701.
- iv) Is organized for profit, with a place of business located in the United States, which operates primarily within the United States or which makes a significant contribution to the United States economy through payment of taxes or use of American products, materials or labor.
- v) Be the primary employer of the Principal Investigator for the project.

- vi) Perform a minimum of 50% of the research as measured by the total direct hours for research and/or analytical work.
 - vii) Complete all required registrations and certifications as set forth in this BAA and the referenced SBA Policy Directive and Proposal Submission portal.
 - viii) Proposers with greater than 20 Phase I awards over the past five fiscal years (currently FY 2013-2017) excluding the most recent year's awards must meet two benchmark requirements for Progress Towards Commercialization as determined by the SBA on 1 June each year.
 - ix) For all proposers with greater than 15 Phase II awards over the last ten fiscal years (currently FY 2007-2016) excluding the last two years' awards, the proposer must have received, to date, an average of at least \$100,000 of sales and/or investments for each Phase II award received or have received a number of patents resulting from the SBIR work equal to or greater than 15% of the number of Phase II awards received during the period.
- e) Majority Ownership by Multiple Venture Capital Operating Companies, Hedge Funds, and/or Private Equity Firms

In accordance with the provisions of 15 USC §638(dd), if any of the firms that are determined eligible to submit DP2 proposals are majority owned by multiple venture capital operating companies, hedge funds, private equity firms, or any combination of these, then the DON will submit the required determination by the Agency Head or designee to permit the issuance of funding awards to such firms. Any firms that are submitting DP2 proposals that fall into this category of ownership are required to complete the registration with the SBA and submit the certifications as described in section 8(d) of the SBIR Policy Directive (PD).

f) Definitions

Many terms are unique to the SBIR Program and this specific SBIR BAA. Definitions of the terms are contained in the statutes governing the SBIR program (primarily found at 15 USC §638, the SBA SBIR Policy Directive, and the Federal Acquisition Regulation), and the DON ADAPT BAA. See Attachment 7.

g) Reporting Fraud, Waste, and Abuse

Knowingly and willfully making any false, fictitious, or fraudulent statements or representations may be a felony under the Federal Criminal False Statement Act (18 U.S.C. Sec 1001), punishable by a fine of up to \$10,000, up to five years in prison, or both.

The Department of Defense, Office of Inspector General Hotline ("Defense Hotline") is an important avenue for reporting fraud, waste, abuse, and mismanagement within the DoD. The Office of Inspector General operates this hotline to receive and investigate complaints or relevant information submitted by contractor employees, DoD civilians, military service members and public citizens. Individuals who wish to report fraud, waste or abuse complaints may contact the Defense Hotline at (800) 424-9098 between 8:00 a.m. and 5:00 p.m. Eastern Time; visit <http://www.dodig.mil/Components/Administrative-Investigations/DoD-Hotline/Hotline-Complaint/>;

or send an email to hotline@dodig.mil. Mailed correspondence should be addressed to the Defense Hotline, The Pentagon, Washington, DC 20301-1900.

2) DON ADAPT SBIR BAA

The DON ADAPT SBIR BAA (this/the BAA) will deviate significantly from previous DP2 BAAs conducted by DoD and DON. The process for demonstrating eligibility for submission of DP2 proposals will be called “Proof of Feasibility” (POF) and the documents required for demonstrating the POF a “Proof of Feasibility Submission” (POFS). There will be an initial open period where any SBIR eligible firm may submit a POFS for evaluation. The government will evaluate the POFS and notify the firms of the results: – either the submitted POFS satisfied the POF criteria under the topic or it did not. All firms whose POFS were determined to have met the criteria for POF will be allowed to submit a DP2 proposal. Both POFS and DP2 proposals will be more compact versions of the data typically received under DoD/DON SBIR BAAs to minimize the time and effort required for preparation and review by the firms and government as well as expenses incurred in the process. The DP2 proposal will be evaluated against the criteria listed in the BAA. Email notices of selection/non-selection for funding agreement award will be sent to all those submitting DP2 proposals. Accelerated timelines are being expected for evaluation of POFS and DP2 proposals as well as award of funding agreements under the BAA.

3) Proposal Preparation Instructions and Requirements

a) Database Registrations

i) Company Registry Database

Prior to any submission under this BAA, all applicants must complete a registry entry with the SBA Company Registry Database (<https://www.sbir.gov/registration>). After completion, an SBA Firm ID will be generated. This SBA Firm ID is required as part of the electronic submission process for this BAA. For information on the data required for firm registry, see “Appendix IV: Company Registry Database” of the SBIR Policy Directive located at: https://www.sbir.gov/sites/default/files/sbir_pd_with_1-8-14_amendments_2-24-14.pdf.

ii) DoD SBIR/STTR Small Business Portal Registration

Potential applicants must be registered in the DoD Submission system at <https://sbir.defensebusiness.org/> in order to submit POFSs as well as DP2 proposals. This registration is a multi-step process and requires first that at least one individual from the firm register within the DoD SBIR/STTR Small Business Portal. Once an individual from the firm is registered, that individual can create a firm registration. Prior to registering in the DoD SBIR/STTR Small Business Portal, firms must have registered in the SBA Company Registry Database. (See above.)

iii) System for Award Management (SAM)

Before the DON can award a funding agreement under this BAA, proposing firms must register in SAM (www.sam.gov). If you were previously registered in the Central Contractor Registration, your information has been transferred to SAM. However, it is in the firm’s interest to visit SAM

and ensure that all of the firm's data is up-to-date to avoid delay in award. SAM replaced the Central Contractor Registration, Online Representations and Certifications Application, and the Excluded Parties List System. SAM allows firms interested in conducting business with the federal government to provide basic information on business capabilities and financial information.

Follow instructions found on the SAM Web site on how to obtain a Commercial and Government Entry (CAGE) code and Data Universal Numbering System (DUNS) number. Once a CAGE code and DUNS number are obtained, update the firm's profile on the DoD Submission Web site at <https://sbir.defensebusiness.org/>.

b) Marking Proprietary Proposal Information

SBCs that include in their POFs or DP2 proposals data that they do not want disclosed to the public for any purpose, or used by the government except for evaluation purposes, shall:

- (1) Mark the first page of each Volume of the proposal submission with the following legend:

"This proposal includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed-in whole or in part-for any purpose other than to evaluate this proposal. If, however, a funding agreement is awarded to this firm as a result of-or in connection with-the submission of this data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting funding agreement. This restriction does not limit the Government's right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained in pages [insert numbers or other identification of sheets]"; and

- (2) Mark each sheet of data it wishes to restrict with the following legend:

"Use or disclosure of data contained on this page is subject to the restriction on the first page of this volume."

c) Cover Sheet Information

As part of the electronic submission of proposals, applicants will be required to complete a cover sheet. The cover sheet includes a number of fields regarding applicant eligibility; participants in the research proposal; certifications concerning the planned performance of the research; that the research does not duplicate research previously performed; if currently proposed to others, notice will be provided immediately on receipt of an award; and a required non-proprietary (publicly releasable) summary of the research and its benefits. A false statements certification and warning is included as part of the cover sheet and reads as follows:

"Knowingly and willfully making any false, fictitious, or fraudulent statements or representations may be a felony under the Federal Criminal False Statement Act (18 USC Sec 1001), punishable by a fine of up to \$10,000, up to five years in prison, or both."

See Attachment 2 for a sample of the Volume I - Proposal Submission Cover Sheet.

d) Data Collection

- i) Each Phase I and Phase II applicant is required to provide information for SBA's database (www.SBIR.gov). The following are examples of the data to be entered by applicants into the database:
 - (1) Any business concern or subsidiary established for the commercial application of a product or service for which an SBIR award is made.
 - (2) Revenue from the sale of new products or services resulting from the research conducted under each Phase II award;
 - (3) Additional investment from any source, other than Phase I or Phase II awards, to further the research and development conducted under each Phase II award.
 - (4) Update the information in the database for any prior Phase II award received by the SBC. The SBC may apportion sales or additional investment information relating to more than one Phase II award among those awards, if it notes the apportionment for each award.
- ii) Each Phase II awardee is required to update the appropriate information on the award in the database upon completion of the last deliverable under the funding agreement and is requested to voluntarily update the information in the database annually thereafter for a minimum period of 5 years.

e) Proposal Content (Applies to both POFS and DP2 unless noted)

i) *Volume 1 – Cover Sheet*

On the DoD Submission Web site at <https://sbir.defensebusiness.org/>, prepare the "Proposal" Cover Sheet. The Cover Sheet must include a brief technical abstract of no more than 200 words that describes the proposed R&D project with a discussion of anticipated benefits and potential commercial applications. Do not include proprietary or classified information in the Proposal Cover Sheet. If your proposal is selected for award, the technical abstract and discussion of anticipated benefits may be publicly released on the Internet. Once the Cover Sheet is saved, the system will assign a proposal number. You may modify the cover sheet as often as necessary until the BAA closes.

ii) *Volume 2 – Technical*

- (1) Proof of Feasibility Submission (POFS) – This submission consists of 5 pages: a Quad Chart and four additional pages. See Attachment 1 for the required content and format for the 5-page submission.
- (2) Direct to Phase II (DP2) Proposal – Those SBCs that are determined to have successfully demonstrated Proof of Feasibility will be notified that they are eligible to submit a DP2 proposal. The DP2 proposal will require a breakdown of the major tasks by Round (I-III) included in the original POFS. Given the unknowns regarding performance related to Round IV, an in-scope modification will be required to authorize Round IV performance and payment. Prior to entry into Round IV, actual scenarios and prototype requirements will be provided to the firm, a negotiated price and milestone plan will be negotiated

amending the Agreement to authorize Round IV. The total page count for the Volume 2 DP2 proposal is not to exceed (NTE) 10 pages.

- (a) The DP2 proposal must include:
- (b) a separate Gantt chart or similar chart of tasks with period of performance, related tasks and dependencies, responsibilities, and required resources for each of the Rounds I, II, and III;
- (c) a detailed discussion of how risks will be managed and issues overcome,
- (d) a separate plan detailing the work to be performed for each of the Rounds I, II, and III;
- (e) a proposed payable milestone chart based on each round, including sub-milestones within each round as appropriate, that matches the tasks in the Gantt chart with a Fixed Price for each milestone not to exceed the total limits set forth in the POFS (see Attachment 6, the Other Transaction Agreement, for a sample milestone chart). (Each Round's milestone chart and work plan must include an unclassified and non-proprietary Final Technical Report that is subject to SBIR Data Rights and that summarizes the work that was completed during the Round and the objectives achieved; and a publicly releasable summary of the research performed and current status of the technology (not greater than 200 words) must be submitted separately and labeled as "Award No. (Fill-in Award No.) SBIR Final Research Summary –Publicly Releasable".); and
- (f) a section labeled Commercialization that includes:
 - (1) the SBC's record of successfully commercializing SBIR or other research;
 - (2) the existence of Phase II funding commitments from private sector or other non-SBIR funding sources;
 - (3) the existence of Phase III follow-on funding commitments for the subject of the research; and
 - (4) other indicators of commercial potential of the developed technology.

iii) Volume 3 – Cost

- (1) Proof of Feasibility Submission (POFS) – For the POFS, a total amount expended for achieving Proof of Feasibility and a proposed total amount for each Round shall be included for each Round I-III. For Rounds I-III a breakdown of hours and estimated prices for major tasks must also be included along with the basis for estimate.
- (2) Direct to Phase II (DP2) Proposal – For those submitting DP2 proposals, the requirement is for a more detailed breakdown of hours per task to include personnel or labor categories and proposed labor costs; total material costs; Other Direct Costs, and subcontract or consultant costs; and the basis of estimates for any items not based on historical records. To the extent items proposed are based on modification of pre-existing commercial items, then only the costs related to modification of existing commercial items and demonstration of commercial pricing and sales are required.

iv) Volume 4 – Company Commercialization Report

The Company Commercialization Report (CCR) is the fourth Volume of a complete proposal package. The CCR is prepared through the DoD Submission Web site (<https://sbir.defensebusiness.org/>). A CCR is required even if the proposing firm has not previously received SBIR or STTR awards. Follow the instructions on the SBIR/STTR Submission Web site and enter the quantitative commercialization results of your firm's prior Phase II projects. Include the items listed below as well as other information relative to your firm's commercialization track record.

- (1) Sales revenue from new products and non-R&D services resulting from Phase II technology;
 - (2) Additional investment from sources other than the federal SBIR/STTR Program in activities that further the development and/or commercialization of Phase II technology;
 - (3) Whether the Phase II technology has been used in a fielded DoD system or acquisition program and, if so, which system or program;
 - (4) The number of patents resulting from the contractor's participation in the SBIR/STTR Programs;
 - (5) Growth in number of firm employees; and
 - (6) Whether the firm has completed an initial public offering of stock (IPO) resulting, in part, from a Phase II project.
- v) All prior DoD and non-DoD Phase II projects must be reported, regardless of whether the project has any commercialization to date. If a firm has no SBIR/STTR awards, the CCR will reflect this and evaluation of commercialization factor will be based solely on the submitted narrative information.
- vi) *Volume 5 – Supporting Documents* - Documents provided in Volume 5 are limited to the following items as indicated. All other items or items exceeding the page limits will be removed prior to evaluation.
- (1) Proof of Feasibility Supporting Documentation (POFS Only) – This section may not be read by evaluators. This section will be reviewed if an evaluator wants additional information concerning information contained within the POFS. This section is not required, is limited to 10 pages, and may include modeling and simulation results of proposed materials/designs, tests of existing models and prototypes, current designs and other material of a highly technical nature to support claims contained in the 5-page technical Volume. Do not include promotional material or sales records as they do not necessarily represent factual documentation of existing technology performance.
 - (2) Exceptions to Model Other Transaction Agreement (OTA) (DP2 Proposal Only) – Firms who have identified exceptions and/or changes to provisions in the Model OTA are encouraged to identify them as soon as possible to facilitate accelerated negotiations and award.
 - (3) Additional Cost Detail (DP2 Proposal Only) – Any additional cost information not included in the Cost Volume should be added here (e.g., copies of subcontract or consultant agreements).

- (4) Assertion of Rights – Any assertions of provision of data, items or computer software from pre-existing sources with limited use rights must be identified here including any previous SBIR/STTR data, items or non-commercial computer software for which extension of data rights protections is sought.
- (5) Key Personnel Resumes – Key personnel resumes should be submitted for the Principal Investigator and up to 4 additional individuals. Resumes are limited to one page per person and should be limited to only that information relevant to the work to be performed under this project.
- (6) Documents Concerning Human Subject Use in Research – Any documentation required for the use of human subjects in the performance of Rounds I-III (e.g., IRB approvals, documentation required by the ONR Human Research Protection Office).

4) Method of Selection and Evaluation Criteria

a) Competitive Process

Agencies must issue SBIR awards pursuant to competitive and merit-based selection procedures. Agencies may not use investment of venture capital or investment from hedge funds or private equity firms as a criterion for an SBIR award. Although matching funds are not required for Phase I or Phase II awards, agencies may require a small business to have matching funds for certain special awards (e.g., to reduce the gap between a Phase II and Phase III award).

The process for awarding all SBIR Phase II awards must be competitive including the award of DP2. Any SBC that meets the eligibility requirements for participation in the SBIR program is eligible to participate under this BAA. Under the procedures set forth for DP2 funding awards, only those firms that are determined to meet the requirements of POF are eligible for submission of proposals for funding agreement awards.

The competitive process will be conducted in two steps as defined below:

- i) Proof of Feasibility – All eligible SBIR firms may submit POFs for determination that the current status of their technologies meet the criteria outlined for POF in relation to the defined topic under which it was submitted.
- ii) DP2 Proposals – All SBCs that previously submitted POFs and whose POFs were determined to meet the criteria for POF are eligible to submit DP2 proposals for review and possible selection for award under this BAA.

b) Number of Awards

There is no limit to the number of POFs submitted or the number of SBCs eligible to submit DP2 proposals. It is estimated the government will award two funding agreements per topic under this BAA. This BAA is not an offer by the government and does not obligate the government to make any specific number of awards. Also, awards under the SBIR Program are contingent upon the availability of funds.

c) Timing of Awards

The current planned timeline for this pilot BAA is based on using an accelerated process for all facets of execution. The government will make its best efforts to adhere to this schedule. Any delay in this schedule shall not entitle any SBC to make any claim against the government.

Based on a BAA closing date for the submission of POFs, the schedule is as follows:

Submission of POFs Due Date	5) May 13, 2019
Notice of POFs Determination and DP2 Eligibility Status	6) May 28, 2019
DP2 Proposal Due Date	7) June 11, 2019
Notice of Selection for DP2 Award	8) June 25, 2019
DP2 Award*	9) August 12, 2019

* Topics requiring Human Subject Testing likely will not meet this target if the SBC does not have existing Institutional Review Board protocols in place.

d) Evaluation Criteria

The overall evaluation criteria are the same for both the POFs and DP2 proposals. The criteria, listed in order of importance, are as follows:

- i) The soundness, technical merit, and innovation of the proposed approach and its incremental progress toward topic or subtopic solution.
- ii) The potential for commercial (government or private sector) application and the benefits expected to accrue from this commercialization.
- iii) The qualifications of the proposed principal/key investigators, supporting staff, and consultants. Qualifications include not only the ability to perform the research and development but also the ability to commercialize the results.

In evaluation of the POFs, these criteria will be used to assess the submission against the expected outcomes listed in the topic description and for Phase I; and the probability of success in completing outcomes listed for Phase II by modifying existing technology. An eligibility requirement for submission of a DP2 proposal is a demonstration, in the POFs, that Phase I expectations have been met and that there is probability for Phase II success.

In evaluation of the DP2 proposal, the criteria listed above will be used to assess the proposer's ability to achieve the requested outcomes listed in the topic description and Phase II section.

5) **Important Considerations**

a) Award Structure

- i) *Other Transaction Agreement* – The type of funding agreement will be an Other Transaction Agreement (OTA) authorized for use under 10 USC 2371b. A copy of the model agreement is included at Attachment 2. While standard Federal Acquisition Regulation (FAR), Defense

Federal Acquisition Regulation Supplement (DFARS), and some other statutory, regulatory, and policy requirements of standard government contracts, grants and cooperative agreements do not apply, there are some mandatory provisions that must be included whenever government funding is used and certain other conditions apply.

- (1) The SBCs are requested to review the attached model OTA and include any exceptions taken to the language of the OTA model in their DP2 proposal in Volume 5. Please indicate why the exception is taken and any requested changes to the existing language.

ii) *Phase II Rounds I-III* – Rounds I-III represent the standard stages of development of a DON Phase II. Rounds I-III will be used as a gated process to ensure that the accelerated development process timeline can be met and that the technology developed is meeting the objectives described in the topic.

- (1) Round I is designed to prove that the concept proposed can meet all of the DON needs outlined in the topic and requires the building of an initial functioning prototype designed to meet DON needs. Round I is limited to a firm fixed price of \$250,000 and the period of performance is not to exceed 6 months. At the end of Round I, success will require the existence of new technology suitable for initial prototype demonstration. Only those firms that produce technologies suitable for testing and demonstration of viability in the next Round will be eligible for additional funding. The government reserves the right to fund some, none, or all, of the Round I participants into Round II depending on the availability of SBIR funds and the capabilities of final Round I technology deliveries to meet DON needs.

- (2) Round II Prototype Demonstration of Viability – Round II, if funded, further builds on the Round I prototype technology to meet DON user's needs. Round II is limited to a firm fixed price of \$500,000 and the period of performance is not to exceed 6 months. During this Round, the SBC will focus on moving beyond proving basic achievement of meeting DON needs to meeting all of the usability features required for integration and deployment. The SBC will be expected to work with actual end users and systems integration personnel to ensure that requirements beyond technological performance of the prototype are identified (e.g., Human System Interface, logistics, training, maintenance, installation). The SBC will use feedback from DON users, systems integrators, and other potential defense and commercial beneficiaries and stakeholders to modify and adapt its prototype to meet defense operational and technical needs and to meet potential dual-use commercial applications. At the end of Round II, the prototype must demonstrate operational and/or commercial viability. The SBC must recommend test procedures to demonstrate viability and an appropriate facility for the test. It is very likely that government personnel will be present for the demonstration. The government is not required to use the proposed testing procedures or facilities. Only those firms that produce technologies suitable for testing and demonstration of operational and/or commercial viability will be eligible for continuation to the next Round and additional funding. The government reserves the right to fund some, none, or all of the Round II participants into Round III depending on the availability of SBIR funds and the capabilities of final Round II prototypes to meet DON needs.

- (3) Round III Pilot Testing in an Operational Environment – Round III, if funded, is limited to

a firm fixed price of \$750,000 and the period of performance is not to exceed 6 months. During Round III, the SBC will meet with DON command stakeholders and operational end users to conduct pilot tests of fully functioning prototypes. These tests are designed to be performed using DON operational personnel in real end user environments and scenarios. All testing will be coordinated with DON command and operational stakeholders. Results of this testing will inform stakeholders on the capabilities of the developed technology and the probability for its deployment in an operational environment. During Round III, the SBC will use feedback from DON users, systems integrators, and other potential defense and commercial beneficiaries and stakeholders to adapt their prototype to optimize defense operational and technical benefits and to provide optimal dual-use commercial market fit. Only those firms that produce technologies suitable for further testing in anticipation of DON deployment into an operational environment and/or commercialization in the private sector will be eligible for continuation to the next Round and additional funding. The government reserves the right to fund some, none, or all of the Round III participants into Round IV depending on the availability of SBIR or non-SBIR funds and the capabilities of final Round III prototype operational testing.

iii) *Round IV Operational Test and Evaluation in Multiple User Scenarios* - Round IV is intended for additional operational testing, if required, using multiple prototypes and users simultaneously in a DON operational environment. This Round may require delivery of multiple prototypes and/or licenses of the technology for testing purposes. If non-government personnel are utilized as part of the testing, appropriate Non-Disclosure Agreements will be obtained to protect against disclosure of the proposer's intellectual property (if properly marked). The proposer may be required to support the conduct of the tests, but the operation of the prototypes in the test must be capable of being performed by the government. SBIR funding if available for Round IV will require non-SBIR government funds included as a 1:1 Cost-Match for any amounts over \$500,000. The required number of end users and prototypes as well as the operational scenarios to be run are not yet defined. Therefore, this Round is currently undefined.

iv) *Phase III Acquisition* – SBIR Phase III includes the acquisition of SBIR-derived products or services intended for use by the federal government, funded by non-SBIR sources of Federal funding without the need for further competition. At its sole discretion, if the government determines the prototypes developed and tested under this award should be procured as production items for government use, the government may negotiate an expansion to this agreement for the acquisition of production items and services without further competition.

b) Milestone Payments

Milestone payments will be subject to negotiation and will be limited to the NTE amounts set forth for Rounds I-III. The milestone amounts are fixed price payments based on the government's evaluation of successful completion of the task or acceptance of delivery of items that comply with the agreement terms. Milestone payments are based on the payable tasks identified in the SBC's DP2 proposal and incorporated into the funding agreement.

c) Reports and Deliverables

Reports and deliverables are those set forth in the DP2 proposal and incorporated into the funding agreement. As a minimum, these deliverables include a Final Technical Report (subject to SBIR Data Rights) and a Final Research Summary (publicly releasable) for each completed Round I-IV.

d) Intellectual Property

i) *Proprietary Information*

Information contained in unsuccessful proposals will remain the property of the applicant. The Government may, however, retain copies of all proposals. Public release of information in any proposal submitted will be subject to existing statutory and regulatory requirements. If the applicant provides proprietary information that constitutes a trade secret, proprietary commercial or financial information, confidential personal information or data affecting the national security, it will be treated in confidence, to the extent permitted by law. This information must be clearly marked by the applicant with the term “confidential proprietary information” and the following legend must appear on the title page of the proposal:

“These data shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed in whole or in part for any purpose other than evaluation of this proposal. If a funding agreement is awarded to this applicant as a result of or in connection with the submission of these data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the funding agreement and pursuant to applicable law. This restriction does not limit the Government's right to use information contained in the data if it is obtained from another source without restriction. The data subject to this restriction are contained on pages ____ of this proposal.”

Any other legend may be unacceptable to the Government and may constitute grounds for removing the proposal from further consideration, without assuming any liability for inadvertent disclosure. The Government will limit dissemination of such information to within official channels.

ii) *Assertion of Rights in Prior Technical Data or Computer Software to be Delivered with Restrictions on Use, Release, or Disclosure*

Assertions of Rights must be made to allow for continuation of the protection period for any previously delivered SBIR/STTR technical data and any other technical data or computer software provided with restricted rights that is related to work proposed to be performed under this funding agreement. In asserting these data rights or use restrictions, firms must provide the following information for each item of Technical Data or Non-Commercial Computer Software to which prior Rights are asserted:

- Identity of Item of Technical Data or Computer Software*
- Basis of Assertion of Rights**
- Asserted Rights Limitations***
- Name of Person Asserting Restrictions****

*If the assertion is applicable to items, components, or processes developed at private expense, identify both the technical data and each such item, component, or process.

**Generally, development at private expense, either exclusively or partially, is the only basis for asserting restrictions on the government's rights to use, release, or disclose technical data or computer software. Indicate whether development was exclusively or partially at private expense. If development was not at private expense, enter the specific reason for asserting that the government's rights should be restricted.

***Enter asserted rights category (e.g., limited rights, restricted rights, government purpose rights, or government purpose license rights from a prior contract, SBIR data rights under another contract, or specifically negotiated licenses).

****Corporation, individual, or other person, as appropriate.

iii) All rights assertions must be included in Volume 5.

iv) SBIR Data Rights

- (1) Rights in technical data, including software, developed under the terms of any agreement resulting from proposals submitted in response to this BAA generally remain with the contractor, except that the government obtains a royalty-free license to use and disclose such technical data only within the Government during the period commencing with award and ending five years after completion of the project under which the data were generated. To preserve the SBIR data rights of the awardee, the following legend must be affixed to any submissions of technical data developed under any SBIR award under this BAA:

(a) "These SBIR data are furnished with SBIR rights under Funding Agreement No. ____ (and subcontract No. ____ if appropriate), Awardee Name ____, Address, Expiration Period of SBIR Data Rights _____. The Government may not use, modify, reproduce, release, perform, display, or disclose technical data or computer software marked with this legend for (five (5) years). After expiration of the (5-year period), the Government has a royalty-free license to use, and to authorize others to use on its behalf, these data for Government purposes, and is relieved of all disclosure prohibitions and assumes no liability for unauthorized use of these data by third parties, except that any such data that is also protected and referenced under a subsequent SBIR award shall remain protected through the protection period of that subsequent SBIR award. Reproductions of these data or software must include this legend."

- (2) During the license period, the government may not release or disclose SBIR data to any person other than its support services contractors except: (1) For evaluation purposes; (2) As expressly permitted by the contractor; or (3) A use, release, or disclosure that is necessary for emergency repair or overhaul of items operated by the government.

v) Reporting of Patents & Inventions

- (1) Small business concerns normally may retain the principal worldwide patent rights to any invention developed with government support. In such circumstances, the government receives a royalty-free license for federal government use, reserves the

right to require the patent holder to license others in certain circumstances, and may require that anyone exclusively licensed to sell the invention in the United States must normally manufacture it domestically. To the extent authorized by 35 U.S.C. 205, the government will not make public any information disclosing a Government-supported invention for a minimum 4-year period (that may be extended by subsequent SBIR funding agreements) to allow the awardee a reasonable time to pursue a patent.

- (2) SBIR awardees must report inventions to the awarding agency within two months of the inventor's report to the awardee. The reporting of inventions may be accomplished by submitting required information via the NIH iEdison Invention Reporting System (iEdison System), a secure interactive Internet site (<http://www.iedison.gov>), or submitting paper documentation using DD Form 882 to:

Office of Naval Research
Attn: John Forrester, Code 00CC
875 N. Randolph Street
Arlington, VA 22203-1995

vi) Copyrights and Publication Permissions

With prior written permission of the Agreements Officer, the awardee normally may copyright and publish (consistent with appropriate national security considerations, if any) material developed with DON support. DON receives a royalty-free license for the federal government and requires that each publication contains an appropriate acknowledgement and disclaimer statement.

e) Performance in the United States

All R/R&D work must be performed by the SBC and its subcontractors in the United States. However, based on a rare and unique circumstance, it is possible to receive approval by the Funding Agreement Officer for a particular portion of the R/R&D work to be performed or obtained in a country outside of the United States, for example, if a supply or material or other item or project requirement is not available in the United States. The Funding Agreement Officer must approve each such specific condition in writing.

f) Percentage of Work Performed by the Awardee

For Phase II (Rounds I-III), a minimum of one-half (50%) of the research and/or analytical work must be performed by the applicant (excludes subcontractors or consultants). The percentage of work is measured by both direct and indirect costs. On rare occasions and prior to award, an exception may be approved by the Funding Agreement Officer when the costs do not accurately reflect the relative research and/or analytical work to be performed.

g) Use of Federal Laboratories

The performance of the SBIR efforts under any funding agreements related to the BAA may include subcontracts/Cooperative Research and Development Agreements (CRADAs) with federal laboratories and Federally Funded Research and Development Centers (FFRDCs). A waiver is no

longer required for the use of federal laboratories and FFRDCs; however, proposers must indicate their planned use of such facilities on the Cover Sheet of their POFs and DP2 proposals (Volume I).

Restrictions on Contacting DON Laboratories: For this BAA, SBCs may not contact DON laboratories for assistance with their proposals or to obtain anything other than information on their capabilities related to the topics of the BAA and potential availability to support any proposed research. Any contact made with a DON-sponsored laboratory shall be via the Office of Research and Technology Applications (ORTA) to locate the point of contact. Contact the DON ORTA via <https://www.onr.navy.mil/en/work-with-us/technology-transfer-t2/ORTA-overview/Navy-ORTA-directory>. Direct contact with potential research personnel who could be performing on any subcontracts/CRADAs or those who have control over the personnel or may benefit from their performance at DON laboratories is not allowed until after submission of DP2 proposals. Violations of this restriction could jeopardize access to the laboratory personnel involved if a Conflict of Interest is found to have occurred.

h) Technical and Business Assistance (TABA)

Under the SBIR program statute 15 USC §638(q), DON may enter into an agreement with one or more vendors to provide TABA to Phase I/II award recipients. The DON may also provide funds to a Phase I/II awardee for the purchase of TABA either to be included as part of the award amount or in addition to the award amount. However, due to the accelerated nature of the projects in this BAA; the fact that initial development to meet proof of feasibility has already been accomplished; and the customer derived nature of the topics, DON will not provide access to its contracted provider of TABA nor provide any additional funding to the award.

i) Export Controls

Some of the research topics within this BAA may be subject to export controls under the International Traffic in Arms Regulations (ITAR), 22 CFR Parts 120 through 130, and the Export Administration Regulations (EAR), 15 CFR Parts 730 through 799. Export Controls will apply to all projects when export restrictions are identified as applicable in the research topic. Firms should know that they are ultimately responsible for compliance with all export control restrictions regardless of whether or not identified by the government. More information is available at <https://www.pmdtc.state.gov/>.

j) Requirements Concerning Human Subject Use in Research

NOTE: Due to the short timeframe associated with this BAA, the DON does not recommend the submission of DP2 proposals that require the use of human subjects unless the SBC already has the proper protocols and approvals in place. The ability to obtain necessary approvals for proposals that involve such matters can take 6-12 months, and that lengthy process can be at odds with the accelerated processing goal for time-to-award under this BAA. Before the DON makes an award that involves an Institutional Review Board (IRB) or similar approval requirement, the SBC must demonstrate compliance with relevant regulatory approval requirements that pertain to proposals involving human use. It will not impact the DON's evaluation, but obtaining the necessary approvals may delay the start time of the funding agreement and if approvals are not obtained within two months of notification of selection for award, the government may decide not to make an award. The government may make an award in the absence of the necessary approval if human subject use

is confined to Rounds II-IV; however, if approvals are not obtained within two weeks of notification of successful completion of a Round, then the Government may decide not to fund the respective Round that includes human subject use.

Available documentation described below shall be submitted in Volume 5 of the proposal or, if post-award, directly to the Agreements Officer.

i) Use of Human Subjects in Research

- (1) SBCs must protect the rights and welfare of individuals who participate as human subjects in research awarded pursuant to this BAA and must comply with the requirements of the Common Rule at 32 CFR part 219 and applicable provisions of DoD Instruction 3216.02, Protection of Human Subjects and Adherence to Ethical Standards in DoD-Supported Research (2011), the DON implementation of the human research protection program contained in SECNAVINST 3900.39E CH-1, 10 USC §980 “Limitation on Use of Humans as Experimental Subjects,” and when applicable, Food and Drug Administration (FDA) and other federal and state law and regulations.
- (2) For proposals containing activities that include or may include “research involving human subjects” as defined in DoDI 3216.02, prior to award the SBC must submit documentation of:

Approval from an Institutional Review Board (IRB) (i.e., IRB-approved research protocol, IRB-approved informed consent document, and other material they considered); proof of completed human research training (e.g., training certificate or institutional verification of training for the principal investigator, co-investigators); and the SBC’s Department of Health and Human Services (DHHS)-issued Federal Wide Assurance (FWA#), including notifications of any suspensions or terminations to the FWA.

Any claimed exemption under 32 CFR §219.104, including the category of exemption, supporting documentation considered by the SBC’s institution in making the determination (e.g., protocol, data collection tools, advertisements). The documentation shall include a short rationale supporting the exemption determination. This documentation should be signed by the IRB Chair or IRB Vice Chair, designated IRB administrator or official of the human research protection program.

Any determinations that the proposal does not contain activities that constitute research involving human subjects, including supporting documentation considered by the SBC’s institution in making the determination. This documentation should be issued by the IRB Chair or IRB Vice Chair, designated IRB administrator or official of the human research protection program.

- (3) If not submitted in Volume 5, documentation must be submitted to the ONR Human Research Protection Official (HRPO), by way of the ONR Program Officer. If the research is determined by the IRB to be greater than minimal risk, the SBC also must provide the name and contact information for the independent research monitor and a written summary of the monitors’ duties, authorities, and responsibilities as approved by the IRB. For assistance with submission of human subject research related documentation,

contact the ONR Human Research Protection Official (HRPO) at (703) 696-4046.

- (4) Agreements will generally include a statement indicating successful completion of the HRPO review. If award is made in the absence of such approval, research involving human subjects must not be commenced under any Agreement (including any subcontract) until the SBC receives notification from the Agreements Officer that the HRPO has approved the assurance as appropriate for the research under the award and that the HRPO has reviewed the protocol and accepted the IRB approval or determination for compliance with Federal, DoD and DON research protection requirements. See guidance at <http://www.onr.navy.mil/About-ONR/compliance-protections/Research-Protections/Human-Subject-Research.aspx>

k) Additional Information

- i) This BAA is intended for informational purposes and reflects current planning. If there is any inconsistency between the information contained herein and the terms of any resulting SBIR funding agreement, the terms of the funding agreement are controlling.
- ii) Before award of an SBIR funding agreement, the government may request that the applicant submit certain organizational, management, personnel, and financial information to assure responsibility of the applicant.
- iii) The government is not responsible for any monies expended by the applicant before award of any funding agreement.
- iv) This BAA is not an offer by the government and does not obligate the government to make any specific number of awards. Also, awards under the SBIR Program are contingent upon the availability of funds.
- v) The SBIR Program is not a substitute for existing unsolicited proposal mechanisms. Unsolicited proposals will not be accepted under the SBIR Program in either Phase I or Phase II.
- vi) If an award is made pursuant to a proposal submitted under this SBIR Program BAA, a representative of the SBC will be required to certify that the concern has not previously been, nor is currently being, paid for essentially equivalent work by any Federal agency.

l) Classified Proposals

Classified proposals will not be accepted under the DoD/DON SBIR Programs. If topics will require classified work during Phase II, the proposing firm must have a facility clearance in order to perform the Phase II work. For more information on facility and personnel clearance procedures and requirements, please visit the Defense Security Service Web site at <http://www.dss.mil/index.html>.

m) Protests

Protests of the terms of this BAA, any notifications regarding determination of POFSSs, and evaluation or selection for award of DP2 proposals should be sent to the Agreements Officer listed

below. Interested parties also may have the right to protest the use of Other Transaction Authority or this competitive process by filing directly with the Government Accountability Office (GAO). If the protest is filed with the GAO, a copy of the protest shall be received in the office designated below within one day of filing with the GAO. The protesting firm shall obtain written and dated acknowledgment of receipt of the protest from:

Office of Naval Research
Attn: Mrs. Valerie Hall, Code 025
875 N Randolph Street
Arlington, VA 22203-1995

Email: valarie.hall@navy.mil

6) Submission of Proposals

a) Timing

- i) Proof of Feasibility Submissions* – SBCs must submit their POFs through the DoD SBIR Submission Portal (see section b) below) before 2:00 pm EDT on May 13, 2019 in order to be considered for funding under this BAA.
- ii) Direct to Phase II Proposals* – SBCs that were notified that their POFs have been determined to demonstrate proof of feasibility must submit their DP2 proposals through the DoD SBIR Submission Portal (see section b) below) before 2:00 pm EDT on June 11, 2019 in order to be considered for funding under this BAA.

b) Submission Instructions

- i)* This BAA and the DoD SBIR/STTR Submission Web site are designed to reduce the time and cost required to prepare a formal proposal.
- ii)* A complete submission/proposal consists of:
 - (1) Volume 1: Proposal Cover Sheet
 - (2) Volume 2: Technical Volume
 - (3) Volume 3: Cost Volume
 - (4) Volume 4: Company Commercialization Report
 - (5) Volume 5: Supporting Documents
- iii)* The Submission Web site provides a structure for providing these five sections. Once the firm begins a Proposal Cover Sheet, it will be assigned a proposal number, which should be kept for future reference.
- iv)* To submit a proposal, the proposer must click the green “Submit Proposal” button. If the proposal status is “In Progress”, it will not be considered “Submitted.” For a more detailed explanation, visit FAQs at <https://sbir.defensebusiness.org/faqs>. The proposer may add the

remaining volumes or modify the Proposal Cover Sheet until BAA close. It is the proposing firm's responsibility to verify that the Technical Volume does not exceed the 5-page limit after upload to the DoD SBIR/STTR Submission site by clicking on the "Verify Technical Volume" icon.

c) Questions

i) *Questions of a Non-Technical Nature concerning the SBIR program, this BAA, proposal content, or Other Transaction Agreements*

- (1) Questions about the SBIR program, about this BAA process or its terms (excluding the technical topics), the content of proposals, and Other Transaction Agreements must be submitted via email to navy-sbir-sttr@navy.mil and include in the subject line ADAPT BAA. For additional information on the DON SBIR program, go to www.navysbir.com.

ii) *Questions Concerning the Research Topics*

- (1) From March 20-April 11, 2019, this BAA will be issued for Pre-Release with the names of the topic authors and their phone numbers and e-mail addresses. During the Pre-Release period, proposing firms have an opportunity to contact topic authors by telephone or e-mail to ask technical questions about specific BAA topics. Questions should be limited to specific information related to improving the understanding of a particular topic's requirements. Proposing firms may not ask for advice or guidance on solution approach and may not submit additional material to the topic author. If information provided during an exchange with the topic author is deemed necessary for proposal preparation, that information will be made available to all parties through SBIR/STTR Interactive Topic Information System (SITIS). After this period questions must be asked through SITIS as described below.

iii) *ADAPT Workshop*

- (1) A workshop will be held in Lowell, MA on April 10-11, 2019. Attendance at the workshop is not required in order to respond to this BAA. Registration and detailed information on the workshop can be found at <https://www.onlineregistrationcenter.com/ADAPT>. During this workshop, attendees will receive an overview of the ADAPT program, an explanation of the topics by the topic authors, and opportunities to meet one-on-one with topic authors, contracting/OTA personnel and personnel from Procurement Technical Assistance Centers who may be able to assist with access to proposal preparation and firm registration assistance.

iv) *SITIS Q&A System*

- (1) Once DoD begins accepting POFs on April 12, 2019, no further direct contact between proposers and topic authors is allowed, unless the Topic Author is responding to a question submitted during the Pre-Release period. However, proposers may submit written questions through SITIS at <https://sbir.defensebusiness.org/topics>. In SITIS, the questioner and respondent remain anonymous and all questions and answers are

posted electronically for general viewing. Answers are generally posted within seven working days of question submission. (Answers will also be e-mailed directly to the inquirer when the inquirer provides an e-mail address.) SITIS will open for the submission of questions on March 20, 2019 and will close for submission of questions on April 26, 2019. Proposing firms are advised to monitor SITIS during the BAA period for questions and answers. Proposing firms should also frequently check the SBIR/STTR Portal for any updates and amendments to the topics.

v) Questions Concerning Electronic Submission or Registrations

- (1) For questions or assistance with submitting POFs or DP2 proposals or registration requirements, please call the DoD SBIR/STTR Help Desk at 1-800-348-0787 or send email to sbirhelpdesk@u.group.

7) Scientific and Technical Information Sources

Topic references that do not have internet or publication information will be posted to SITIS at <https://sbir.defensebusiness.org/topics> under the appropriate BAA/Topic Number.

8) Submission Forms and Certifications

Numerous certifications are required as part of the application process, as part of the cover sheet, and as part of the separate certificates required to be submitted at various times, including with an application, prior to and during any award. These certificates are discussed below and found in Attachments 3, 4, and 5 as indicated.

As part of the electronic submission of proposals, applicants will be required to complete a cover sheet. The cover sheet includes a number of questions regarding applicant eligibility; participants in the research proposal; certifications concerning the planned performance of the research; that the research does not duplicate research previously performed; if currently proposed to others, notice will be provided immediately on receipt of an award; and a required non-proprietary (publicly releasable) summary of the research and its benefits. A false statements certification and warning is included as part of the cover sheet which reads as follows:

“Knowingly and willfully making any false, fictitious, or fraudulent statements or representations may be a felony under the Federal Criminal False Statement Act (18 USC Sec 1001), punishable by a fine of up to \$10,000, up to five years in prison, or both.”

See Attachment 2 for a sample of the Proposal Submission Cover Sheet. The following forms and certifications will be required to be submitted by applicants under the BAA and recipients of awards as indicated.

a) SBIR Funding Agreement Certification

SBIR applicants are required to submit a certification at the time of award. The certification requires that the applicant state that it meets the size, ownership and other requirements of the SBIR Program at the time of award of the funding agreement. A copy of the SBIR Funding Agreement Certification is included as Attachment 3.

b) SBIR Funding Agreement Certification –Life Cycle Certification

SBIR awardees are required to submit certifications during the funding agreement life cycle. For the Direct to Phase II awards being made under this BAA, the awardee must submit a new certification as to whether it qualifies as an SBC and it complies with specific SBIR Program requirements prior to receiving the final payment or disbursement for each Round. A copy of the SBIR Funding Agreement Certification - Life Cycle Certification is included as Attachment 4.

c) Certification for Applicants that are Majority-Owned by Multiple Venture Capital Operating Companies, Hedge Fund or Private Equity Firms

Applicants, whose initial 5-page submission result in a determination that technical feasibility has been proven, will be eligible to submit a DP2 proposal. Any of the eligible firms that intend to submit a proposal and are majority-owned by multiple venture capital operating companies (VCOCs), Hedge Funds (HFs), or Private Equity Firms (PEFs) must register with the SBA to become part of its database. These applicants must also include as part of their proposals, in Volume 5, a completed majority-owned VCOC, HF, or PEF Certification. Should an applicant become a member of this ownership class after submitting its application and prior to any receipt of a funding agreement, the firm must immediately notify the Agreements Officer, register in the appropriate SBA database, and submit the required certification. A copy of the Certification for Applicants that are Majority-Owned by Multiple Venture Capital Operating Companies, Hedge Fund or Private Equity Firms is included as Attachment 5.

9) Research Topics

NAVY SBIR X19.1 Topic Index

NX19-001	Compact Inflatable Structures for Submerged Payload Launch & Recovery
NX19-002	On Demand Structures – Submarine Launch of UUVs
NX19-003	Flow Conditioning for Improved Piping Arrangement
NX19-004	Quiet Bunks
NX19-005	Cool Suits
NX19-006	High Power Compact Fuel Cell System

NAVY SBIR X19.1 Topic Descriptions

NX19-001

TITLE: Compact Inflatable Structures for Submerged Payload Launch & Recovery

TECHNOLOGY AREA(S): Ground/Sea Vehicles

ACQUISITION PROGRAM: Virginia Class Submarines

The technology within this topic is restricted under the International Traffic in Arms Regulation (ITAR), 22 CFR Parts 120-130, which controls the export and import of defense-related material and services, including export of sensitive technical data, or the Export Administration Regulation (EAR), 15 CFR Parts 730-774, which controls dual use items. Offerors must disclose any proposed use of foreign nationals (FNs), their country(ies) of origin, the type of visa or work permit possessed, and the statement of work (SOW) tasks intended for accomplishment by the FN(s) in accordance with section 3.5 of the Announcement. Offerors are advised foreign nationals proposed to perform on this topic may be restricted due to the technical data under US Export Control Laws.

OBJECTIVE: The U.S. Navy (USN) seeks to develop enabling technologies for the use of soft inflatable structures as components to undersea payload launch and recovery (L&R) systems. Inflatable structures using seawater as the inflation medium are particularly attractive to the USN because of their ability to produce large developable shapes possessing significant load-carrying capacities and stiffness when inflated and for their ability to achieve smaller form factors and volume reductions when deflated.

DESCRIPTION: The current state of inflatable soft structures technologies can provide unique solutions to many challenges limiting today's Undersea Warfare (USW) launch and recovery operations. Inflatable soft structures have been successfully developed for DoD, NASA, industry, etc. and are generally categorized in the following sectors:

- Inflatable control surfaces,
- Deployable energy absorbers,
- Temporary "on-demand" structures

Successful design and performance of soft inflatable structures is attributed to technological advancements derived from:

- High Performance Fibers (HPF) including but not limited to Vectran®, DSP® (dimensionally stable polyester), PEN (polyethylene naphthalate), Spectra® (ultra-high molecular weight polyethylene), Kevlar®, and others,
- Novel fabric architectures and 3-dimensional preforms capable of unique mechanical behaviors,
- Continuous weaving processes for elimination of seams,
- Robust Physics-Based Modeling (PBM) methods with Fluid-Structure Interaction (FSI) capabilities,
- Material test methods for characterization of multi-axial mechanical behaviors for inputs to numerical models.

Collectively, these advancements have established a sound technology base; one that can be readily leveraged for innovative solutions to soft structure designs requiring significant load-carrying capacities, shock mitigation, dynamic energy absorption, rapid deployment, large deployed-to-stowed volume ratios, and fail-safe modes of operations.

This effort seeks to develop a soft inflatable structure, with a compact and predictable deflated shape, for payload recovery operations. The inflated and deflated configurations will be compared to established deployed-to-stowed volume ratios. The inflatable structures considered for use may include, but are not limited to, control volumes constructed of inflated skins, membrane bladders, coated fabrics, and hybrid (soft/rigid) material systems. Hybrid structures may include inflatable elements with semi- or fully-rigid reinforcements serving as deployment shaping controls. Seawater, supplied through an integral pump, will be the inflation medium.

The key challenge to taking advantage of their space saving potentials is managing the deflated shape and resulting form factor especially in the presence of crossflow velocity fields. This challenge is increasingly difficult for larger

structures that are not accessible to personnel as the inflated components are deflating. Payload L&R systems operating at prescribed submergence depths require that the inflatable components function in a deterministic, repeatable and predictable manner in the undersea environment.

The minimum operational constraints are:

- Inflation media is seawater
- Submerged operational depth: 100 ft (inflating and deflating)
- Operational cycles: 1000
- Minimum size of inflatable features: 6" diameter x 36" length
- Assist vehicle recovery via submarine standard 21-inch diameter by 25-foot long tube
- Crossflow velocity: 5 knots
- Inflate to full pressure in 15.0 seconds
- Maintain internal pressure for 24 hours
- Provide pressure relief for internal pressure exceeding 2.5x ambient pressure within 5.0 seconds
- Variance in deflated volume envelope: < 10% over 1000 operational cycles

The volumes of the soft inflatable structures at the inflated and deflated states will be determined through simulations, experiments and demonstrations. The developable shapes upon reaching the inflation pressures will be predicted through modeling simulations and measured from experiments. The deflated shapes and form factors will be predicted through modeling simulations and measured from experiments.

Work produced in Phase II may become classified. Note: The prospective contractor(s) must be U.S. owned and operated with no foreign influence as defined by DoD 5220.22-M, National Industrial Security Program Operating Manual, unless acceptable mitigating procedures can and have been implemented and approved by the Defense Security Service (DSS). The selected contractor and/or subcontractor must be able to acquire and maintain a secret level facility and Personnel Security Clearances, in order to perform on advanced phases of this project as set forth by DSS and ONR in order to gain access to classified information pertaining to the national defense of the United States and its allies; this will be an inherent requirement. The selected company will be required to safeguard classified material IAW DoD 5220.22-M during the advanced phases of this contract.

PHASE I: Proposers must provide concept designs, simulations of initial prototype designs, test results from laboratory experiments, and other relevant documentation to demonstrate that the proposed technical solutions are feasible for accomplishing the stated objectives and will meet the performance parameters set forth in the description.

By submitting Phase I proof of feasibility documentation, the small business asserts that none of the funding for the cited technology was reimbursed under any federal government agency's SBIR/STTR program. Demonstrating proof of feasibility is a requirement for a Direct to Phase II award.

PHASE II: For this topic, proposers must meet the following program requirements for each round to be considered for the next round:

Round I: Select and optimize a soft inflatable structure including material selections, hydraulic layout design and manifolding (as required), inflation/deflation sequencing, hard-to-soft-goods connections for vehicle recovery from a notional launch tube. As stated in the solicitation, the period of performance for Round I shall not exceed 6 months and the total fixed price shall not exceed \$250,000.

Round II: Identify operational, safety and environmental issues of proposed designs and will perform risk identifications, risk assessments and risk mitigation plans during the concept development stage. As stated in the solicitation, the period of performance for Round II shall not exceed 6 months and the total fixed price shall not exceed \$500,000.

Round III: Prototype build of the proposed soft inflatable structure and testing to validate achievement of the deflation objectives stated in the description. The prototype soft inflatable structure including deflation capability shall be delivered to the US Navy for testing in accordance with the operational requirements stated. As stated in the solicitation, the period of performance for Round III shall not exceed 6 months and the total fixed price shall not exceed \$750,000.

It is probable that the work under this effort will be classified under Phase II (see Description section for details).

PHASE III DUAL USE APPLICATIONS: Round IV: Installation of a final Prototype system into a submarine horizontal torpedo tube for operational test and evaluation for vehicle recovery. This Round may result in a limited number of licenses of the technology to allow for testing of the technology in various conditions and by multiple end users. The resulting technology will be of significant interest to the oil, power and telecommunications industries which rely on UUVs for monitoring and exploration of pipelines and cables on the seabed. Subsurface vehicle recovery would be a significant benefit.

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1. Hulton, A., Cavallaro, P., and C. Hart, C. "MODAL ANALYSIS AND EXPERIMENTAL TESTING OF AIR-INFLATED DROP-STITCH FABRIC STRUCTURES USED IN MARINE APPLICATIONS." 2017 ASME International Mechanical Engineering Congress and Exposition, Tampa, FL, November 3-9, 2017, IMECE2017-72097. <http://proceedings.asmedigitalcollection.asme.org/proceeding.aspx?articleid=2669415>
2. Cavallaro, P., Hart, C., and Sadegh, A. "MECHANICS OF AIR-INFLATED DROP-STITCH FABRIC PANELS SUBJECT TO BENDING LOADS." NUWC-NPT Technical Report #12,141, 15 August 2013. <https://apps.dtic.mil/dtic/tr/fulltext/u2/a588493.pdf>
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7. Cavallaro, P., Sadegh, A. and Johnson, M. "MECHANICS OF PLAIN-WOVEN FABRICS FOR INFLATED STRUCTURES." Composite Structures Journal, Vol. 61, 2003, pp. 375-393.
8. Quigley, C., Cavallaro, P., Johnson, A., and Sadegh, A. "ADVANCES IN FABRIC AND STRUCTURAL ANALYSES OF PRESSURE INFLATED STRUCTURES." Conference Proceedings of the 2003 ASME International Mechanical Engineering Congress and Exposition, IMECE2003-55060, November 15-21, 2003, Washington, DC. <http://proceedings.asmedigitalcollection.asme.org/proceeding.aspx?articleid=1595613>

KEYWORDS: Undersea Payloads; Launch and Recovery Systems; Soft Structures; Inflatables

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Questions may also be submitted through DOD SBIR/STTR SITIS website.

NX19-002 TITLE: On Demand Structures – Submarine Launch of UUVs

TECHNOLOGY AREA(S): Ground/Sea Vehicles

ACQUISITION PROGRAM: Virginia Class Submarines

OBJECTIVE: The U.S. Navy (USN) seeks to develop enabling capabilities for launch and recovery (L&R) operations of Unmanned Underwater Vehicles (UUVs) from submarines at prescribed submergence conditions. More specifically, there is a need to launch vehicles of different hull diameters from a standard 21-inch diameter by 25-foot long tube (ocean interface). To prevent damage to the tube and vehicles, and to stabilize the vehicle's orientation throughout the launch event, a UUV Sabot System (UUVSS) is sought. Vehicles will be launched under their own power and the UUVSS will separate from the vehicle upon exiting the tube. The UUVSS can be designed as either expendable or nonexpendable.

DESCRIPTION: The current state of inflatable soft structures technologies can provide unique solutions to many challenges limiting today's Undersea Warfare (USW) operations, capabilities and system designs. Inflatable soft structures have been successfully developed for DoD, NASA, and industry and are generally categorized in the following sectors:

- Inflatable control surfaces
- Deployable energy absorbers
- Temporary "on-demand" structures

Expendable UUVSS's must exit the tube with the vehicle; once reaching the free field, the UUVSS will detach from the vehicle with no hardware connections remaining between the UUVSS and the tube. Nonexpendable UUVSS's shall remain inside the tube throughout the launch event and will be recovered for reuse by the weapons crew. The UUVSS will eliminate the need for multiple launch tubes of different sizes to support launch operations for the range of UUV sizes required and will minimize mission reconfiguration activities.

The minimum operational and associated requirements for the UUVSS follow:

- Launch capable for UUV's in the 12-inch to 18-inch diameter sizes
- Launch from submarine standard 21-inch diameter by 25-foot long tube
- Launch at submergence depths to 100.0 feet
- Launch in crossflow speeds up to 5.0 knots
- Inflate to 2.5x depth pressure in 15.0 seconds
- Maintain internal pressure to 3.5x depth pressure for 24 hours
- Provide pressure relief for internal pressure exceeding 2.5x depth pressure within 5.0 seconds
- Protect UUV control surfaces
- Perform 30 launch cycles
- Prevent interference with tube opening/closing operations

Successful design and performance of soft inflatable structures is attributed to technological advancements derived from:

- High Performance Fibers (HPF) including, but not limited to, Vectran®, DSP® (dimensionally stable polyester), PEN (polyethylene naphthalate), Spectra® (ultra-high molecular weight polyethylene), Kevlar®, and others
- Novel fabric architectures and 3-dimensional preforms capable of unique mechanical behaviors
- Continuous weaving processes for elimination of seams
- Robust Physics-Based Modeling (PBM) methods with Fluid-Structure Interaction (FSI) capabilities
- Material test methods for characterization of multi-axial mechanical behaviors for inputs to numerical models

Collectively, these advancements have established a sound technology base; one that can be readily leveraged for

innovative solutions to soft structure designs requiring significant load-carrying capacities, shock mitigation, dynamic energy absorption, rapid deployment, large deployed-to-stowed volume ratios, and fail-safe modes of operations.

The UUVSS shall consist of a generally soft or soft/rigid hybrid inflatable structure and a seawater pump interface (SPI). The SPI will connect the UUVSS soft structure to the tube seawater pump, which will be used to controllably inflate and deflate the UUVSS with seawater as the inflation medium. Both inflation and deflation operations will be performed after the UUVSS is configured onto the vehicle and the vehicle is positioned inside the tube.

The soft structures considered for use in developing the UUVSS may include, but are not limited to, control volumes constructed of inflated skins, membrane bladders, coated fabrics, and hybrid (soft/rigid) material systems. Hybrid sabots may include inflatable elements with semi- or fully-rigid reinforcements serving as deployment shaping controls, friction minimizing contact interfaces, etc. The pressurization media for all inflatable components will be limited to seawater.

PHASE I: Provide concept designs, simulations of initial prototype designs, test results from laboratory experiments, or other relevant documentation to demonstrate that the proposed technical solutions are feasible for accomplishing the stated objectives and meeting the performance parameters set forth in the Description.

By submitting Phase I proof of feasibility documentation, the small business asserts that none of the funding for the cited technology was reimbursed under any federal government agency's SBIR/STTR program. Demonstrating proof of feasibility is a requirement for a Direct to Phase II award.

PHASE II: Round I: Optimize the UUVSS design including material selections for the soft structural components, hydraulic layout design and manifolding, inflation/deflation sequencing, porting to a generic tube seawater pump, hard-to-soft-goods connections, and environmental factors. Testing of the UUVSS prototype shall be conducted by the U.S. Navy in accordance with stated objectives. As stated in the solicitation, the period of performance for Round I shall not exceed 6 months and the total fixed price shall not exceed \$250,000.

Round II: Identify operational, safety, and environmental issues of proposed UUVSS designs. Perform risk identifications, risk assessments, and risk mitigation plans from the concept development stage. As stated in the solicitation, the period of performance for Round II shall not exceed 6 months and the total fixed price shall not exceed \$500,000.

Round III: Build a prototype of the proposed UUVSS and test to validate the above requirements for launching UUVs from a 21-inch tube. Deliver the prototype UUVSS to the Naval Undersea Warfare Center, Newport, RI for testing in accordance with the stated operational requirements. As stated in the solicitation, the period of performance for Round III shall not exceed 6 months and the total fixed price shall not exceed \$750,000.

PHASE III DUAL USE APPLICATIONS: Launch and recovery of commercial watercraft (e.g., Jet Skis) is an opportunity space for dual use.

REFERENCES:

1. Hulton, A., Cavallaro, P., and Hart, C. "MODAL ANALYSIS AND EXPERIMENTAL TESTING OF AIR-INFLATED DROP-STITCH FABRIC STRUCTURES USED IN MARINE APPLICATIONS." , 2017 ASME International Mechanical Engineering Congress and Exposition, Tampa, FL November 3-9, 2017, IMECE2017-72097. <http://proceedings.asmedigitalcollection.asme.org/proceeding.aspx?articleid=2669415>
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3. Sadegh, A. and Cavallaro, P. "MECHANICS OF ENERGY ABSORBABILITY IN PLAIN-WOVEN FABRICS: AN ANALYTICAL APPROACH." Journal of Engineered Fibers and Fabrics, vol. 62, pp. 495-509, March 2012. <https://www.jeffjournal.org/papers/Volume7/7.1.2Sadegh.pdf>

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5. Avallone, Eugene A., Baumeister III, Theodore, and Sadegh, Ali M. Marks' Standard Handbook for Mechanical Engineers, 11th Edition (Chapter: Air-inflated fabric Structures by P. Cavallaro and A. Sadegh), McGraw-Hill, 2006, pp. 20.108-20.118. <https://www.amazon.com/Marks-Standard-Handbook-Mechanical-Engineers/dp/0071428674>

6. Cavallaro, P., Sadegh, A., Quigley, C. "BENDING BEHAVIOR OF PLAIN-WOVEN FABRIC AIR BEAMS: FLUID-STRUCTURE INTERACTION APPROACH.", 2006 ASME International Mechanical Engineering Congress and Exposition, Chicago, Ill, November 05, 2006, IMECE2006-16307. <https://apps.dtic.mil/dtic/tr/fulltext/u2/a456155.pdf>

7. Cavallaro, P., Sadegh, A. and Johnson, M. "MECHANICS OF PLAIN-WOVEN FABRICS FOR INFLATED STRUCTURES." Composite Structures Journal, Vol. 61, 2003, pp. 375-393.

8. Quigley, C., Cavallaro, P., Johnson, A., and Sadegh, A. "ADVANCES IN FABRIC AND STRUCTURAL ANALYSES OF PRESSURE INFLATED STRUCTURES." Conference Proceedings of the 2003 ASME International Mechanical Engineering Congress and Exposition, IMECE2003-55060, November 15-21, 2003, Washington, DC. <http://proceedings.asmedigitalcollection.asme.org/proceeding.aspx?articleid=1595613>

KEYWORDS: Unmanned Underwater Vehicles; UUV; Launch and Recovery Systems; Soft Structures; Inflatables

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Questions may also be submitted through DOD SBIR/STTR SITIS website.

NX19-003 TITLE: Flow Conditioning for Improved Piping Arrangement

TECHNOLOGY AREA(S): Ground/Sea Vehicles

ACQUISITION PROGRAM: Columbia Class Submarine

OBJECTIVE: In order to minimize straight pipe length requirements, a technology is sought that can expedite the establishment of a fully-developed flow profile after non-straight pipe sections such as elbows and bends. The solution should readily integrate with existing piping and should produce minimal pressure drop. Furthermore, it is required that the solution does not induce cavitation and does not produce excessive vibrations.

DESCRIPTION: Pumps and flow meters require a consistent, developed flow profile to function properly. Typically, a developed flow profile is achieved after direction changes, or flow disturbances, through a minimum required length of straight pipe. This length requirement negatively impacts packaging as ship arrangement space is extremely valuable. Additionally, minimum straight length requirements can drive the suction inlet of pumps high in the ship to the detriment of net positive suction head. Thus, minimizing straight pipe requirements can have a significant impact on the final product (e.g. ship design and layout of spaces within the ship, manufacturing requirements, and maintenance times). The goal is to minimize straight pipe length requirements without significant

drops in flow pressure, or affecting suction inlet positive pressure in pumps located higher in the ship.

PHASE I: Proposers must provide test results from laboratory experiments, simulations using initial prototype designs, or other relevant documentation to demonstrate that the proposed technical solution is feasible of improving flow downstream of pipe directional changes. Straight pipe lengths to achieve uniform, swirl free flow profile shall be decreased by approximately 50% from the baseline non-conditioned flow profile, accomplishing the objective stated above, and will be able to meet the performance parameters set forth in the description.

By submitting Phase I proof of feasibility documentation, the small business asserts that none of the funding for the cited technology was reimbursed under any federal government agency's SBIR/STTR program. Demonstrating proof of feasibility is a requirement for a Direct to Phase II award.

PHASE II: Round I. Build of the prototype apparatus for full flow-profile after non-straight pipe sections. The prototype must be able to readily integrate into existing piping systems and be capable of demonstrating that it meets the above requirements. As stated in the solicitation, the period of performance for Round I shall not exceed 6 months and the total fixed price shall not exceed \$250,000.

Round II. Prototype Demonstration of Viability: The initial prototype will be tested in a laboratory or shop room that simulates operational conditions. The Government will observe the prototype tests and provide feedback. A prototype performance report and an updated prototype design will be provided to the Government at the end of Round II. As stated in the solicitation, the period of performance for Round II shall not exceed 6 months and the total fixed price shall not exceed \$500,000.

Round III. Pilot Testing in an Operational Environment: The prototype(s) from Round II will be evaluated in an operational environment selected by the Government. The operational environment may be at one or more locations and may include multiple tests. Government representatives will attend tests and will provide feedback to the performer. The performer will use operational test results and Government feedback to refine the prototype for continued testing. A fully functional prototype and a detailed report on prototyping test results will be provided to the Government at the end of Round III. As stated in the solicitation, the period of performance for Round III shall not exceed 6 months and the total fixed price shall not exceed \$750,000.

Round IV. Operational Test and Evaluation in Multiple User Scenarios: Additional prototypes from Round III with detailed installation and operating instructions will be provided to the Government during Round IV. The Government or a non-Government partner (under an NDA) will test and evaluate the prototype in multiple operating environments as selected by the Government or the non-Government partner. The performer will assist in these tests and evaluations as requested by the Government. SBIR funding (if available) for Round IV will require non-SBIR government funds included as a 1:1 Cost-Match for any amounts over \$500,000. The number of end users and prototypes required, as well as the operational scenarios to be run are not yet defined. Therefore, this option is currently unpriced.

PHASE III DUAL USE APPLICATIONS: This technology will have commercial application in any industrial fluid piping systems currently used in oil, gas, and power plant applications.

REFERENCES:

1. International Organization of Standards ISO 5167-2:2003(E). Measurement of fluid flow by means of pressure differential devices
2. The Practical Pumping Handbook, Elsevier Science, ISBN: 9781856174107
3. Blaine D. Sawchuk, Dale P. Sawchuk, Danny A. Sawchuk, "Flow conditioning and effects on accuracy for fluid flow measurement" American School of Gas Measurement Technology 2010
4. Laws E M and Ouazanne A K, 1994. Compact installations for differential flowmeters [J] Flow Measurement and Instrumentation 5 79-85

5. M. Anwer, R. M. C. So, and Y. G. Lai. Perturbation by and recovery from bend curvature of a fully developed turbulent pipe flow. *Physics of Fluids A* (1989-1993), 1(8):1387–1397, 1989.

6. A.K. Ouazzane, R. Benhadj, (2002) "Flow conditioners design and their effects in reducing flow metering errors", *Sensor Review*, Vol. 22 Issue: 3, pp.223-231, <https://doi.org/10.1108/02602280210433061>

KEYWORDS: Fully-Developed Flow; Piping; Flow Control

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Questions may also be submitted through DOD SBIR/STTR SITIS website.

NX19-004 TITLE: Quiet Bunks

TECHNOLOGY AREA(S): Human Systems, Materials/Processes

ACQUISITION PROGRAM: Columbia Class Submarine

OBJECTIVE: Today's sailors are asked to perform ever increasing tasks and thus need to be at peak performance. Restful sleep is essential to achieving this peak performance, yet the close working quarters inside submarines can be detrimental to sleep cycles. Therefore, materials and uses of materials to bolster the natural sleep cycle for more restorative rest are desired. Additionally, sound damping materials may be used to reduce mechanical or other noises onboard platforms.

DESCRIPTION: Solutions are sought that provide the acoustic performances necessary to meet the objective described above for sailors. Proposed solutions may be new materials with improved acoustic properties, or they may be established materials used in new, creative manners.

Chosen materials and use of materials must provide a continuous acoustic level for individual bunks on a submarine not to exceed 30 dB [Ref 1]. While typical crew bunks measure 76" X 26" [Ref 2] with approximately 2 feet between bunks, these numbers may vary somewhat, and so proposed solutions must accommodate variable sizing. Implementation cannot involve direct contact with the sailor (e.g., no headphones) and cannot hamper the sailor's movement or prevent immediate actions (e.g., rapid bunk exit). Furthermore, proposed solutions must not create total sound isolation and must allow sailors to hear sounds associated with any urgent situations. All materials and uses of material must meet all strict fire and safety requirements on a submarine including flame resistance. The material should also be applicable to placement on mechanical and other noise sources onboard a submarine. Cost and ease of use of materials will also be considered when determining viability of a solution.

PHASE I: In the initial 5-page proposal, proposers must provide test results from laboratory experiments, simulations using initial prototype designs, or other relevant documentation to demonstrate that the proposed technical solution is feasible for accomplishing the objectives stated above and will be able to meet the performance parameters set forth in the Description. In addition, the initial proposal must provide requested information on tasks and costs for each of the four (4) rounds of incremental funding at each Milestone Decision, as described in detail in the Technical Proposal Guideline.

By submitting Phase I proof of feasibility documentation, the small business asserts that none of the funding for the cited technology was reimbursed under any federal government agency's SBIR/STTR program. Demonstrating proof of feasibility is a requirement for a Direct to Phase II award.

PHASE II: For this topic, proposers must meet the following program requirements for each round to be considered for the next round:

Round I. Prototype Development: Manufacture a material that can be easily assembled into a functioning prototype and meets the acoustic performance requirements. A prototype design and a preliminary early prototype construction will be shown to the Government. A report will be provided to the Government describing material manufacturability, material performance, and prototype design at the end of Round I. As stated in the solicitation, the period of performance for Round I shall not exceed 6 months and the total fixed price shall not exceed \$250,000.

Round II. Prototype Demonstration of Viability: The material and design from Round I will be used to produce one or more initial functioning prototypes. The initial prototype will be tested for its acoustic damping performance in a laboratory or shop room that simulates operational conditions. The Government will observe the prototype tests and provide feedback. A prototype performance report and an updated prototype design will be provided to the Government at the end of Round II. As stated in the solicitation, the period of performance for Round II shall not exceed 6 months and the total fixed price shall not exceed \$500,000.

Round III. Pilot Testing in an Operational Environment: The prototype(s) from Round II will be evaluated in an operational environment selected by the Government. The operational environment may be at one or more locations and may include multiple tests. Government will attend tests and will provide feedback to the performer. The performer will use operational test results and Government feedback to refine the prototype for continued testing. A fully functional prototype and a detailed report on prototyping test results will be provided to the Government at the end of Round III. As stated in the solicitation, the period of performance for Round III shall not exceed 6 months and the total fixed price shall not exceed \$750,000.

Round IV. Operational Test and Evaluation in Multiple User Scenarios: Additional prototypes from Round III with detailed operating instructions will be provided to the Government during Round IV. The Government or a non-Government partner (under an NDA) will test and evaluate the prototype in multiple operating environments as selected by the Government or the non-Government partner. The performer will assist in these tests and evaluations as requested by the Government. SBIR funding (if available) for Round IV will require non-SBIR government funds included as a 1:1 Cost-Match for any amounts over \$500,000. The number of end users and prototypes required, as well as the operational scenarios to be run are not yet defined. Therefore, this option is currently unpriced.

PHASE III DUAL USE APPLICATIONS: Round IV delivers a fully functional prototype or product with detailed operating instructions to the Government and non-Government partners (e.g., Electric Boat shipyard) for evaluation in real-world environments. Round IV may result in a limited number of licenses or purchases of the prototype or product to allow for testing in various conditions and by multiple end users. The resulting technology will be of significant interest to the commercial sector for acoustic control in personal close-quarters and for machinery noise abatement.

REFERENCES:

1. "Night Noise Guidelines for Europe." World Health Organization Report, 2009.
http://www.euro.who.int/__data/assets/pdf_file/0017/43316/E92845.pdf
2. Fleet Sheets Custom Bedding Co. "Size Guide", <https://www.fleetsheetsusa.com/pages/size-guide>

KEYWORDS: Acoustic; Noise; Sleep; Materials

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Questions may also be submitted through DOD SBIR/STTR SITIS website.

NX19-005

TITLE: Cool Suits

TECHNOLOGY AREA(S): Human Systems, Materials/Processes

ACQUISITION PROGRAM: Columbia-Class Submarine Program of Record

OBJECTIVE: Columbia-Class submarines have a higher steel preheat requirement than previous classes. Currently, welders suffer from heat exhaustion (especially during the summer months) and the new Columbia requirement will only exacerbate this problem. Increasing weld times by just a half-hour in aggregate would yield immense productivity gains. Clothing materials that reduce the thermal body temperature of welders while maintaining ergonomics and dexterity will significantly mitigate this issue. Furthermore, this heat reducing material can be leveraged to decrease equipment heat loads and thus increase performance periodicities.

DESCRIPTION: Solutions are sought that provide the thermal control performance necessary to meet the objectives described above for shipyard personnel. Proposed solutions may be new materials with improved thermal control properties, or they may be established materials used in new, creative manners.

Chosen materials and use of materials must increase welders' aggregate work time by a minimum of 30 minutes and maintain thermal comfort for the worker while performing other shipyard tasks. The material may provide a barrier against external heat, but must not entrap heat on the worker or on equipment when used to decrease heat loads. Wearing of the material as clothing must not hamper worker full freedom of movement and dexterity (i.e., the application cannot require use of an external cooling unit or connections). All materials and use of material must meet all strict fire and safety requirements for the shipyard [Refs 1,2]. Cost and ease of use of material will also be considered when determining viability of a solution.

PHASE I: For the initial 5-page proposal, proposers must provide test results from laboratory experiments, simulations using initial prototype designs, or other relevant documentation to demonstrate that the proposed technical solution is feasible for accomplishing the objectives stated above and will be able to meet the performance parameters set forth in the Description.

In addition, the initial proposal must provide requested information on tasks and costs for each of the four (4) rounds of incremental funding at each Milestone Decision, as described in the Technical Proposal Guideline.

By submitting Phase I proof of feasibility documentation, the small business asserts that none of the funding for the cited technology was reimbursed under the federal government's SBIR/STTR program. Demonstrating proof of feasibility is a requirement for Direct to Phase II award.

PHASE II: For this topic, proposers must meet the following program requirements for each round to be considered for the next round:

Round I. Prototype Development: Manufacture a material that can be easily assembled into a functioning prototype and meets the thermal performance requirements. A prototype design and a preliminary early prototype construction will be shown to the Government. A report will be provided to the Government describing material manufacturability, material performance, and prototype design at the end of Round I. As stated in the solicitation, the period of performance for Round I shall not exceed 6 months and the total fixed price shall not exceed \$250,000.

Round II. Prototype Demonstration of Viability: The material and design from Round I will be used to produce one or more initial functioning prototypes. The initial prototype will be tested for its thermal control performance in a laboratory or shop room that simulates welder operational conditions. The Government will observe the prototype tests and provide feedback. A prototype performance report and an updated prototype design will be provided to the Government at the end of Round II. As stated in the solicitation, the period of performance for Round II shall not

exceed 6 months and the total fixed price shall not exceed \$500,000.

Round III. Pilot Testing in an Operational Environment: The prototype(s) from Round II will be evaluated in an operational environment selected by the Government. The operational environment may be at one or more locations and may include multiple tests. Government will attend tests and will provide feedback to the performer. The performer will use operational test results and Government feedback to refine the prototype for continued testing. A fully functional prototype and a detailed report on prototyping test results will be provided to the Government at the end of Round III. As stated in the solicitation, the period of performance for Round III shall not exceed 6 months and the total fixed price shall not exceed \$750,000.

Round IV. Operational Test and Evaluation in Multiple User Scenarios: Additional prototypes from Round III with detailed operating instructions will be provided to the Government during Round IV. The Government or a non-Government partner (under an NDA) will test and evaluate the prototype in multiple operating environments as selected by the Government or the non-Government partner. The performer will assist in these tests and evaluations as requested by the Government. SBIR funding (if available) for Round IV will require non-SBIR government funds included as a 1:1 Cost-Match for any amounts over \$500,000. The number of end users and prototypes required, as well as the operational scenarios to be run are not yet defined. Therefore, this option is currently unpriced.

PHASE III DUAL USE APPLICATIONS: Round IV delivers a fully functional prototype or product with detailed operating instructions to the Government and non-Government partners (e.g., Electric Boat shipyard) for evaluation in real-world environments. This Round IV may result in a limited number of licenses or purchases of the prototype or product to allow for testing in various conditions and by multiple end users. The resulting technology will be of significant interest for commercial welding, hot construction, and athletic wear.

REFERENCES:

1. Clarification of OSHA's position on FR Clothing for welders, <https://www.osha.gov/laws-regs/standardinterpretations/2012-01-12>
2. OSHA Welding, Cutting and Brazing, <https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.252>

KEYWORDS: Thermal; Heat; Welder; Comfort

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Questions may also be submitted through DOD SBIR/STTR SITIS website.

NX19-006 TITLE: High Power Compact Fuel Cell System

TECHNOLOGY AREA(S): Ground/Sea Vehicles

ACQUISITION PROGRAM: Columbia Class Submarine

The technology within this topic is restricted under the International Traffic in Arms Regulation (ITAR), 22 CFR Parts 120-130, which controls the export and import of defense-related material and services, including export of sensitive technical data, or the Export Administration Regulation (EAR), 15 CFR Parts 730-774, which controls dual use items. Offerors must disclose any proposed use of foreign nationals (FNs), their country(ies) of origin, the type of visa or work permit possessed, and the statement of work (SOW) tasks intended for accomplishment by the FN(s)

in accordance with section 3.5 of the Announcement. Offerors are advised foreign nationals proposed to perform on this topic may be restricted due to the technical data under US Export Control Laws.

OBJECTIVE: Develop a compact fuel cell system (e.g., stackable fuel cells, hydrogen and oxygen fuel sources, all balance-of-plant equipment including by-product management components) capable of producing, at a minimum, 500 kW of power. Minimize the overall volume and weight of the overall system and system complexity, which is vital for deployment (e.g., underwater manned and unmanned platforms, surface ships, forward operating bases). Ensure that the system has a fast start-up time (<5 minutes), demonstrates high reliability, and shows ease of maintenance and repair of its lowest replaceable units.

DESCRIPTION: Fuel cell systems have performance advantages (e.g., higher operating efficiencies, lower maintenance costs) and arrangement flexibility in a power distribution system over diesel generators. The fuel sources for a diesel generator are diesel and air while the sources for a fuel cell are hydrogen and oxygen. Hydrogen does not exist on its own in nature and must be extracted or reformed from another compound (e.g., water, fossil fuels). Some fuel cell systems use stored hydrogen that has already been extracted elsewhere, while others reform hydrogen from liquid or solid fuels when needed. The desired output voltage from the fuel cell system shall be between 700 and 850 Volts Direct Current (VDC). Commercially available fuel cells use either pure oxygen or oxygen from atmospheric air as their fuel sources. All fuel cells are susceptible to performance and life degradation (<1% cell voltage degradation per 1000 hours of operation) by impurities in their fuels (e.g., hydrogen is required to be at a minimum 99.97% pure). For successful military use, a fuel cell system shall be able to maintain performance and predicted life in rugged environmental conditions (e.g., atmospheric air at a temperature range between -40°C and 45°C with high humidity and containing sand, salt, dust, and other particles). Minimizing the overall volume (maximum of 0.9 ft³/kW) and weight (maximum of 60 lb/kW) of the overall system and system complexity is vital for deployment.

PHASE I: Provide a detailed system concept for 500 kW system in a manned submarine, specifying all components (e.g., fuel cells, fuel sources, balance-of-plant equipment) and a breakdown of their volume and weight. Provide predicted performance and operational details at 100% rated load (e.g., fuel consumption rates, cooling requirements [air, water, rates, temperature range], waste heat generation, by-product generation, required electrical power for pumps, control system and other equipment) from simulations, laboratory experiments, or other relevant documentation that demonstrates that the proposed technical solution can feasibly accomplish the Objective and will be able to meet the performance parameters set forth in the Description. Proposers must provide details for a scaled prototype (e.g., 10, 10 kW) that can be developed in Phase II to verify and validate the Phase I concept. Develop System Preliminary Hazard Analyses (PHA) and standing operating procedures (to be updated in Phase II).

By submitting Phase I proof of feasibility documentation, the small business asserts that none of the funding for the cited technology was reimbursed under any federal government agency's SBIR/STTR program. Demonstrating proof of feasibility is a requirement for a Direct to Phase II award.

PHASE II: For this topic, proposers must successfully complete the following program requirements for each round to be eligible for funding for the next round:

Round I. Proof of Concept - the firm is required to design, manufacture, and test a scaled demonstration prototype system to verify the performance and operational details from Phase I. As stated in the solicitation, the period of performance for Round I shall not exceed 6 months and the total fixed price shall not exceed \$250,000.

Round II. Prototype Demonstration of Viability: A full scale prototype will be built and tested in a laboratory or shop room that simulates operational conditions. Validate the volume and weight predictions of all components using the built and functional prototype system. Ensure that the prototype system demonstrates the profiles provided in the attached tables (available in SITIS). Government representatives will observe the prototype tests and provide feedback. A prototype performance report and an updated full scale prototype design will be provided to the Government at the end of Round II. As stated in the solicitation, the period of performance for Round II shall not exceed 6 months and the total fixed price shall not exceed \$500,000.

Round III. Pilot Testing in an Operational Environment: Based on successful verification and validation, refine the

full-scale fuel cell system based on lessons learned from the prototype development and test effort. The prototype(s) from Round II will be evaluated in an operational environment selected by the Government. The operational environment may be at one or more locations and may include multiple tests. Government representatives will attend tests and will provide feedback to the performer. The performer will use operational test results and Government feedback to refine the prototype for continued testing. A fully functional prototype and a detailed report on prototyping test results will be provided to the Government at the end of Round III. As stated in the solicitation, the period of performance for Round III shall not exceed 6 months and the total fixed price shall not exceed \$750,000.

Round IV. Operational Test and Evaluation in Multiple User Scenarios: Additional prototypes from Round III with detailed installation and operating instructions will be provided to the Government during Round IV. The Government or a non-Government partner (under an NDA) will test and evaluate the prototype in multiple operating environments as selected by the Government or the non-Government partner. The performer will assist in these tests and evaluations as requested by the Government. SBIR funding (if available) for Round IV will require non-SBIR government funds included as a 1:1 Cost-Match for any amounts over \$500,000. The number of end users and prototypes required, as well as the operational scenarios to be run are not yet defined. Therefore, this option is currently unpriced.

PHASE III DUAL USE APPLICATIONS: Package the system into standard shipping container(s) (specific size(s) will be based on final Phase II concept design) for use in lieu of diesel generators on surface ships and land-based sites for both military and commercial end users such as pleasure crafts, small cruising boats, ferries, and harbor patrol boats.

REFERENCES:

1. Hikosaka, N., "Fuel Cells: Current Technology Challenges and Future Research Needs.", 29 October 2012.
2. Vielstich W., Lamm A. & Gasteiger H.A., "Handbook of Fuel Cells: Fundamentals, technology and applications". (c. 2003 – 2009)
3. Profiles of Continuous Operation (Uploaded to SITIS 03/xx/2019)

KEYWORDS: Power Generation; Fuel Cell

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10) List of Attachments:

Attachment 1 – Phase I Proof of Feasibility Guideline

Attachment 2 – Proposal Submission Cover Sheet

Attachment 3 – SBIR Funding Agreement Certification

Attachment 4 – SBIR Funding Agreement Certification- Life Cycle Certification

Attachment 5 – Certification for Applicants that are Majority-Owned by Multiple Venture Capital Operating Companies, Hedge Fund or Private Equity Firms

Attachment 6 – Other Transaction Agreement

Attachment 7 – Definitions

Attachment 8 – Acronyms

ATTACHMENT 1
PHASE I PROOF OF FEASIBILITY GUIDELINE

NOTE: The following are guidelines for preparing the Phase I Proof of Feasibility Submission (POFS). To the extent these guidelines differ from the requirements of the instructions in the BAA, follow the BAA. These are generic instructions especially concerning the required accomplishments for each Round. The actual requirements will be dictated by the technical topic, technology, technical approach, and initial development status at entry. Proposer's are responsible for tailoring their submission based on the individual circumstances under which the will submit.

All pages are to be submitted on standard 8½" x 11" white paper, singled-sided with no smaller than 10 pitch font and no smaller than ½" margins for text documents. For charts, graphs, and other non-textual works proposers may use a smaller pitch size; however, the proposer assumes all risk if the item is determined unreadable and not considered by evaluators as part of their review.

The Volume 2 Technical Proposal POFS consists of 2 components combined into a single 5-page PDF document:

- a single page Quad Chart
- a textual document not to exceed four pages

All pages are to be submitted on standard 8½" x 11" white paper, singled-sided with no smaller than 10 pitch font and no smaller than ½" margins for text documents. For charts, graphs, and other non-textual works proposers may use a smaller pitch size; however, the proposer assumes all risk if the item is determined unreadable and not considered by evaluators as part of their review.

The contents of both documents are discussed below.

Quad Chart:

The quad chart provides a less detailed summary of what is included in the text document. The quad Chart gives a quick overview in four quadrants: I- the current state of the technology, II- what is needed to meet the objective of the topic and the risks of being able to achieve this, III- how the final results will be commercialized, and IV- what resources are available to accomplish the objective and how they will be provided. The quad chart must include a header that includes the proposal title, firm name, and submission portal assigned proposal number. If proprietary or other information that has restrictions on release (e.g. data rights) you must include appropriate restrictive markings in the footer.

Textual Document:

The textual document is designed to provide additional/specific details included in the Quad Chart. While the quad chart is focused primarily on giving an overview, the Textual Document provides details on the existing technology relative to the specific topic objectives and how work undertaken in Rounds I-III can achieve the objectives. It outlines tasks, risks and costs at each stage of Rounds I-III to both clarify what needs to be done based on the current state and how likely the objectives can be met by existing technology.

The Textual Document should be organized into the following four sections addressing the points listed in each section.

ATTACHMENT 1
PHASE I PROOF OF FEASIBILITY GUIDELINE

1. Proof of Feasibility

- a. Describe current state of technology (i.e. what exists at the time of proposal) in relation to the proposed solution. For example, there may exist current prototypes, commercial products or designs that the company proposes to modify to meet the DON needs identified in the topic.
- b. Provide detailed information demonstrating how the capabilities of the current technology prove that achievement of topic needs is possible (i.e. the current technology is capable, using the concept proposed, to meet the needs with additional research). For example, provide test data or simulations showing current technology or designs can achieve some of the needs and has the capacity to improve capabilities in areas not yet achieved. Detailed test results and data (up to 10 pages) that support textual explanations and conclusions explanations may be included in Volume 5; however, the information may not be read by evaluators. The Volume 5 information should only be used to provide additional detail and clarifications of the results used to support technical capabilities regarding the current technology or design.
- c. Describe your company's or personnel's experience with the current or similar technologies and strategy for commercializing the proposed technology in DON/DoD, other Federal Agencies, and/or private sector markets. Provide specific information on the market need the technology will/did address and the size of the market. Also include a schedule showing the quantitative commercialization results expected from this technology/or achieved by your company in similar prior projects.
- d. Identify key personnel who were involved in the developing the technology supporting the Phase I Proof of Feasibility effort including information on directly related education and experience. A concise technical resume (limited to 1 page) of the principal investigator and up to 4 key staff may be included (Please do not include Privacy Act Information) in Volume 5.
- e. Proposer must include a statement certifying that in the development of the current technology no SBIR/STTR funding was used. This includes the incorporation of technologies and information that are subject to SBIR/STTR Data Rights and other intellectual property rights protections (e.g. Patents filed as a result of work performed under a SBIR/STTR contract or subcontract). This does not include work funded under non-SBIR/STTR funded government contracts.

2. Round I – Prototype Development

The firm should include in its proposal a textual summary and milestone chart of how it will achieve the following Round I objectives. The textual summary should be broken down by major task and indicate what actions will be taken, how identified risks will be overcome, key personnel involved in performance, and total estimated cost for the task. The milestone chart should indicate the tasks to be performed and duration of performance.

- a. Round I is designed to prove that the concept proposed can meet all of the DON needs outlined in the Topic. This Round requires the building of an initial functioning prototype designed to meet DON needs.
- b. At the end of Round I success will require the existence of new technology suitable for demonstrating proof of concept or a modified version of existing technology ready for demonstration.
- c. Only those firms who produce technologies suitable for testing and demonstration of viability in the next Round will be eligible for additional funding. The government

ATTACHMENT 1
PHASE I PROOF OF FEASIBILITY GUIDELINE

reserves the right to fund some, none, or all of the Round I participants into Round II depending on the availability of funds and capabilities of final Round I technology deliveries to meet DON needs.

3. Round II – Prototype Demonstration of Viability

The firm should include in its proposal a textual summary and milestone chart of how it will achieve the following Round II objectives. The textual summary should be broken down by major task and indicate what actions will be taken, how identified risks will be overcome, key personnel involved in performance, and total estimated cost for the task. The milestone chart should indicate the tasks to be performed and duration of performance.

- a. This Round further builds on the Round I Prototype technology to meet DON user's needs. During this Phase the proposer will focus on moving beyond proving basic achievement of needs to meeting all of the usability features required for integration and deployment.
- b. During Round II, the proposer would be expected to work with actual end users and systems integration personnel to ensure that requirements beyond technological performance of the prototype are identified (e.g. Human System Interface, logistics, training, maintenance, installation).
- c. At the of Round II, the Prototype must demonstrate operational and where appropriate commercial viability. The proposer should provide recommended test procedures to demonstrate viability and a facility for the test. It is very likely that government personnel will be present for the demonstration. The Government is not required to use the testing procedures of facilities proposed.
- d. Only those firms who produce technologies suitable for testing and demonstration of operational and/or commercial viability will be eligible for continuation to the next Round and additional funding. The government reserves the right to fund some, none, or all of the Round II participants into Round III using SBIR/STTR funds depending on the availability of funds and capabilities of final Round II prototypes to meet DON needs.

4. Round III – Pilot Testing in an Operational Environment

The firm should include in its proposal a textual summary and milestone chart of how it will achieve the following Round III objectives. The textual summary should be broken down by major task and indicate what actions will be taken, how identified risks will be overcome, key personnel involved in performance, and total estimated cost for the task. The milestone chart should indicate the tasks to be performed and duration of performance.

- a. During Round III the proposer will meet with DON command stakeholders and operational end users to conduct pilot tests of fully functioning prototypes. These tests are designed to be performed using DON operational personnel in real end user environments and scenarios. All testing will be coordinated with DON command and operational stakeholders.
- b. Results of this testing will inform stakeholders on the capabilities of the developed technology and the probability for its deployment in an operational environment.
- c. This Round completes the initially defined and funded portion of the effort. Round IV, if pursued, will be defined and funded after negotiation of an Agreement modification.
- d. Only those firms who produce technologies suitable for/requiring further testing in anticipation of DON deployment into an operational environment will be eligible for continuation for additional Round IV funding. The government reserves the right to fund some, none, or all of the Round III participants into Round IV depending on the availability of funds and capabilities of final Round III prototype operational testing.

ATTACHMENT 2
PROPOSAL SUBMISSION COVER SHEET



Small Business Innovation Research (SBIR) Program Proposal Cover Sheet

Knowingly and willfully making any false, fictitious, or fraudulent statements or representations may be a felony under the Federal Criminal False Statement Act (18 USC Sec 1001), punishable by a fine of up to \$10,000, up to five years in prison, or both.

SBIR Direct to Phase II Proposal

Proposal Number: [Assigned by the Submission System]

Agency Information

Agency Name: [Department of Navy]

Command: [Office of Naval Research]

Topic Number: [As listed in BAA/selected from drop down menu in submission site]

Proposal Title: [As decided by firm]

Firm Information

Firm Name:

Mail Address:

Website Address:

DUNS: [See BAA section 3a if you do not have a DUNS number]

CAGE: [See BAA section 3a if you do not have a CAGE Code]

SBA SBC Identification Number: [See BAA section 3a if you do not have a SBA SBC Identification Number]

-
1. Does your firm allow for the release of its contact information to Economic Development Organizations?

Certification

2. Are you a small business as described in section 3.15 of the solicitation, with no more than 500 employees including affiliates? The highlighted section refers to a DoD BAA for this special DON BAA see section 1d.
3. Does your business concern meet the ownership and control requirements in 13 CFR 121.702?
4. Is 50% or more of your firm owned or managed by a corporate entity?
5. At a minimum, will one half of the research and/or analytical work in Phase II be carried out by your small business as described in section 4.2 of the solicitation? The highlighted section refers to a DoD BAA for this special DON BAA see section 5f
6. Is primary employment of the principal investigator with your firm as described in section 4.2 of the solicitation? The highlighted section refers to a DoD BAA for this special DON BAA see section 1d.
7. Has your firm been convicted of a fraud-related crime involving SBIR and/or STTR funds or found civilly liable for a fraud-related violation involving Federal funds?

ATTACHMENT 2
PROPOSAL SUBMISSION COVER SHEET

Please provide the name of the associated company:

8. Has your firm's Principal Investigator (PI) or Corporate Official (CO), or owner been convicted of a fraud-related crime involving SBIR and/or STTR funds or found civilly liable for a fraud-related violation involving Federal funds?

Please provide the individual's name:

9. Has your firm met the performance benchmarks in section 3.1 of the solicitation and listed by the SBA on their website as eligible to participate? **The highlighted section refers to a DoD BAA for this special DON BAA see section 1d**
10. Is your firm registered in the SBA's venture capital database as majority-owned by venture capital operating companies, hedge funds, or private equity firms?
11. Is your firm more than 50% owned by a single Venture Capital Owned Company (VCOC), hedge fund, or private equity firm?
12. Is your firm more than 50% owned by multiple business concerns that are VCOCs, hedge funds, or private equity firms?

(NOTE: IAW Section 4.2 of the solicitation, firms that do not meet all eligibility requirements will not receive award. IAW Section 4.4 of the solicitation, small businesses that are owned in majority part by multiple VCOCs, hedge funds, or private equity funds are ineligible to submit proposals for opportunities in this solicitation.) DISREGARD THIS NOTE AS FIRMS MAJORITY OWNED BY MULTIPLE VCOCs, HF's, AND PEFs ARE ELIGIBLE TO SUBMIT.

Business Information

13. Number of employees including all affiliates (average for preceding 12 months):
14. Is your firm affiliated as set forth in 13 CFR 121.103?

Affiliate Name Affiliate Address

Number of Employees

15. As defined by SBA:
- a. Are you a socially or economically disadvantaged small business?
 - b. Are you a Woman-Owned small business (WOSB)?
 - c. Are you a certified HUBZone small business concern?
 - d. Are you a Service-Disabled Veteran-Owned small business (SDVOSB)?
16. Has the Defense Contracting Audit Agency (DCAA) or other agreed upon agency, performed a review of your accounts or records in connection with government contracts or subcontracts within the past 12 months?

Agency Firm

ATTACHMENT 2
PROPOSAL SUBMISSION COVER SHEET

Address

Auditor Phone:

Email:

Agency for which the review was performed

Agency Name:

Command:

Topic Number:

Proposal Title:

Firm Name:

Mail Address:

Website Address:

DUNS:

CAGE:

SBA SBC Identification Number:

Proposal Information

Proposed Base Cost: [Round I]

Base Duration (in months) [Round I]

Proposed Option 1 Cost [Round II]

Option 1 Duration (in months) [Round II]

Proposed Option 2 Cost [Round III]

Option 2 Duration (in months) [Round III]

Proposed Option 3 Cost

Option 3 Duration (in months)

Proposed Option 4 Cost

Option 4 Duration (in months)

17. Does the proposed cost include Discretionary Technical Assistance (DTA)? [NO]

What is the proposed DTA amount:

18. Has a proposal for essentially equivalent work been submitted to other US government agencies or DOD components?

List the name(s) of the agency or DOD component and if SBIR or STTR, list Topic Number in the space below.

19. Has a contract been awarded for any of the proposals listed above?

If yes, please provide the contract number:

20. Are you submitting assertions in accordance with DFARS 252.227-7017 "Identification and assertions use, release, or disclosure restriction"?

21. Are you proposing research that utilizes human/animal subjects or recombinant DNA as described in section 3.11, 3.12, and 3.13 of the solicitation? The highlighted section refers to a DoD BAA for this special DON BAA see section 5j

ATTACHMENT 2
PROPOSAL SUBMISSION COVER SHEET

Technical Abstract (Limit to 200 words with no classified or proprietary information).

Anticipated Benefits/Potential Commercial Applications of the Research or Development

List of maximum 8 Key Words or phrases, separated by commas, that describe the Project

For any purpose other than to evaluate the proposal, this data except proposal cover sheets shall not be disclosed outside the Government and shall not be duplicated, used or disclosed in whole or in part, provided that if a contract is awarded to this proposer as a result of or in connection with the submission of this data, the Government shall have the right to duplicate, use or disclose the data to the extent provided in the funding agreement. This restriction does not limit the Government's right to use information contained in the data if it is obtained from another source without restriction. This restriction does not apply to routine handling of proposals for administrative purposes by Government support contractors as indicated in Section 5.3 of the solicitation. The data subject to this restriction is contained on the pages of the proposal listed on the line below.

Proprietary information (list page numbers)

Project Team Information

22. Are teaming partners or subcontractors proposed?

Partner Name	Partner Type	Partner POC
--------------	--------------	-------------

23. Are you proposing to use foreign nationals as defined in section 3.5 of the solicitation for work under the proposed effort? The highlighted section refers to a DoD BAA for this special DON BAA see Attachment 7

Principal Investigator (PI) / Corporate Official (CO) Information

- 24. What percentage of the principal investigator's total time will be on the project?
- 25. Is the principal investigator (identified below) a woman?
- 26. Is the principal investigator (identified below) socially/economically disadvantaged?
- 27. Is your firm's PI, CO, or owner, a faculty member or student of an institution of higher education?

Principal Investigator / Project Manager

Name:

Title:

Phone:

Fax:

E-Mail:

Corporate Official (Business)

Name:

Title:

Phone:

ATTACHMENT 2
PROPOSAL SUBMISSION COVER SHEET

Fax:

E-Mail:

ATTACHMENT 3
SBIR FUNDING AGREEMENT CERTIFICATION

All small businesses that are selected for award of an SBIR funding agreement must complete this certification at the time of award and any other time set forth in the funding agreement that is prior to performance of work under this award. This includes checking all of the boxes and having an authorized officer of the awardee sign and date the certification each time it is requested.

Please read carefully the following certification statements. The Federal government relies on the information to determine whether the business is eligible for a Small Business Innovation Research (SBIR) Program award. A similar certification will be used to ensure continued compliance with specific program requirements during the life of the funding agreement. The definitions for the terms used in this certification are set forth in the Small Business Act, SBA regulations (13 C.F.R. Part 121), the SBIR Policy Directive and also any statutory and regulatory provisions referenced in those authorities.

If the funding agreement officer believes that the business may not meet certain eligibility requirements at the time of award, they are required to file a size protest with the U.S. Small Business Administration (SBA), who will determine eligibility. At that time, SBA will request further clarification and supporting documentation in order to assist in the verification of any of the information provided as part of a protest. If the funding agreement officer believes, after award, that the business is not meeting certain funding agreement requirements, the agency may request further clarification and supporting documentation in order to assist in the verification of any of the information provided.

Even if correct information has been included in other materials submitted to the Federal government, any action taken with respect to this certification does not affect the Government's right to pursue criminal, civil or administrative remedies for incorrect or incomplete information given in the certification. Each person signing this certification may be prosecuted if they have provided false information.

The undersigned has reviewed, verified and certifies that (all boxes must be checked):

(1) The business concern meets the ownership and control requirements set forth in 13 C.F.R. §121.702. ☐ Yes ☐ No

(2) If a corporation, all corporate documents (articles of incorporation and any amendments, articles of conversion, by-laws and amendments, shareholder meeting minutes showing director elections, shareholder meeting minutes showing officer elections, organizational meeting minutes, all issued stock certificates, stock ledger, buy-sell agreements, stock transfer agreements, voting agreements, and documents relating to stock options, including the right to convert non-voting stock or debentures into voting stock) evidence that it meets the ownership and control requirements set forth in 13 C.F.R. §121.702.

☐ Yes ☐ No ☐ N/A Explain why N/A: _____

(3) If a partnership, the partnership agreement evidences that it meets the ownership and control requirements set forth in 13 C.F.R. §121.702.

☐ Yes ☐ No ☐ N/A Explain why N/A: _____

ATTACHMENT 3
SBIR FUNDING AGREEMENT CERTIFICATION

(4) If a limited liability company, the articles of organization and any amendments, and operating agreement and amendments, evidence that it meets the ownership and control requirements set forth in 13 C.F.R. §121.702.

▪ Yes ▪ No ▪ N/A Explain why N/A: _____

(5) The birth certificates, naturalization papers, or passports show that any individuals it relies upon to meet the eligibility requirements are U.S. citizens or permanent resident aliens in the United States.

▪ Yes ▪ No ▪ N/A Explain why N/A: _____

(6) It has no more than 500 employees, including the employees of its affiliates.

▪ Yes ▪ No

(7) SBA has not issued a size determination currently in effect finding that this business concern exceeds the 500 employee size standard.

▪ Yes ▪ No

(8) During the performance of the award, the principal investigator will spend more than one half of his/her time as an employee of the awardee or has requested and received a written deviation from this requirement from the funding agreement officer. ☐Yes ☐No ☐Deviation approved in writing by funding agreement officer: ____%

(9) All, essentially equivalent work, or a portion of the work proposed under this project (check the applicable line):

- Has not been submitted for funding by another Federal agency.
- Has been submitted for funding by another Federal agency but has not been funded under any other Federal grant, contract, subcontract or other transaction.
- A portion has been funded by another grant, contract, or subcontract as described in detail in the proposal and approved in writing by the funding agreement officer.

(10) During the performance of award, it will perform the applicable percentage of work unless a deviation from this requirement is approved in writing by the funding agreement officer (check the applicable line and fill in if needed):

- SBIR Phase I: at least two-thirds (66 2/3%) of the research.
- SBIR Phase II: at least half (50%) of the research.
- Deviation approved in writing by the funding agreement officer: __%

(11) During performance of award, the research/research and development will be performed in the United States unless a deviation is approved in writing by the funding agreement officer.

▪ Yes ▪ No ▪ Waiver has been granted

(12) During performance of award, the research/research and development will be performed at my facilities with my employees, except as otherwise indicated in the SBIR application and approved in the funding agreement.

▪ Yes ▪ No

ATTACHMENT 3
SBIR FUNDING AGREEMENT CERTIFICATION

(13) It has registered itself on SBA's database as majority-owned by venture capital operating companies, hedge funds or private equity firms.

▪ Yes ▪ No ▪ N/A Explain why N/A: _____

(14) It is a Covered Small Business Concern (a small business concern that:

(a) was not majority-owned by multiple venture capital operating companies (VCOs), hedge funds, or private equity firms on the date on which it submitted an application in response to an SBIR solicitation; and (b) on the date of the SBIR award, which is made more than 9 months after the closing date of the solicitation, is majority-owned by multiple venture capital operating companies, hedge funds, or private equity firms).

▪ Yes ▪ No

▪ It will notify the Federal agency immediately if all or a portion of the work proposed is subsequently funded by another Federal agency.

▪ I understand that the information submitted may be given to Federal, State and local agencies for determining violations of law and other purposes.

▪ I am an officer of the business concern authorized to represent it and sign this certification on its behalf. By signing this certification, I am representing on my own behalf, and on behalf of the business concern that the information provided in this certification, the application, and all other information submitted in connection with this application, is true and correct as of the date of submission. I acknowledge that any intentional or negligent misrepresentation of the information contained in this certification may result in criminal, civil or administrative sanctions, including but not limited to: (1) fines, restitution and/or imprisonment under 18 U.S.C. §1001; (2) treble damages and civil penalties under the False Claims Act (31 U.S.C. §3729 *et seq.*); (3) double damages and civil penalties under the Program Fraud Civil Remedies Act (31 U.S.C. §3801 *et seq.*); (4) civil recovery of award funds, (5) suspension and/or debarment from all Federal procurement and nonprocurement transactions (FAR Subpart 9.4 or 2 C.F.R. part 180); and (6) other administrative penalties including termination of SBIR/STTR awards.

Signature	Date __/__/__
Print Name (First, Middle, Last)	
Title	
Business Name	

ATTACHMENT 4
SBIR FUNDING AGREEMENT CERTIFICATION – LIFE CYCLE CERTIFICATION

All SBIR Phase I and Phase II awardees must complete this certification at all times set forth in the funding agreement (see §8(h) of the SBIR Policy Directive). This includes checking all of the boxes and having an authorized officer of the awardee sign and date the certification each time it is requested.

Please read carefully the following certification statements. The Federal government relies on the information to ensure compliance with specific program requirements during the life of the funding agreement. The definitions for the terms used in this certification are set forth in the Small Business Act, the SBIR Policy Directive, and also any statutory and regulatory provisions referenced in those authorities.

If the funding agreement officer believes that the business is not meeting certain funding agreement requirements, the agency may request further clarification and supporting documentation in order to assist in the verification of any of the information provided.

Even if correct information has been included in other materials submitted to the Federal government, any action taken with respect to this certification does not affect the Government's right to pursue criminal, civil or administrative remedies for incorrect or incomplete information given in the certification. Each person signing this certification may be prosecuted if they have provided false information.

The undersigned has reviewed, verified and certifies that (all boxes must be checked):

(1) The principal investigator spent more than one half of his/her time as an employee of the awardee or the awardee has requested and received a written deviation from this requirement from the funding agreement officer.

▪ Yes ▪ No ▪ Deviation approved in writing by funding agreement officer: %

(2) All, essentially equivalent work, or a portion of the work performed under this project (check the applicable line):

- Has not been submitted for funding by another Federal agency.
- Has been submitted for funding by another Federal agency but has not been funded under any other Federal grant, contract, subcontract or other transaction.
- A portion has been funded by another grant, contract, or subcontract as described in detail in the proposal and approved in writing by the funding agreement officer.

(3) Upon completion of the award it will have performed the applicable percentage of work, unless a deviation from this requirement is approved in writing by the funding agreement officer (check the applicable line and fill in if needed):

- SBIR Phase I: at least two-thirds (66 2/3%) of the research.
- SBIR Phase II: at least half (50%) of the research.
- Deviation approved in writing by the funding agreement officer: %

ATTACHMENT 4
SBIR FUNDING AGREEMENT CERTIFICATION – LIFE CYCLE CERTIFICATION

(4) The work is completed and it has performed the applicable percentage of work, unless a deviation from this requirement is approved in writing by the funding agreement officer (check the applicable line and fill in if needed):

- SBIR Phase I: at least two-thirds (66 2/3%) of the research.
- SBIR Phase II: at least half (50%) of the research.
- Deviation approved in writing by the funding agreement officer: %
- N/A because work is not completed

(5) The research/research and development is performed in the United States unless a deviation is approved in writing by the funding agreement officer.

- Yes ▪ No ▪ Waiver has been granted

(6) The research/research and development is performed at my facilities with my employees, except as otherwise indicated in the SBIR application and approved in the funding agreement.

- Yes ▪ No
- It will notify the Federal agency immediately if all or a portion of the work proposed is subsequently funded by another Federal agency.
- I understand that the information submitted may be given to Federal, State and local agencies for determining violations of law and other purposes.
- I am an officer of the business concern authorized to represent it and sign this certification on its behalf. By signing this certification, I am representing on my own behalf, and on behalf of the business concern, that the information provided in this certification, the application, and all other information submitted in connection with the award, is true and correct as of the date of submission. I acknowledge that any intentional or negligent misrepresentation of the information contained in this certification may result in criminal, civil or administrative sanctions, including but not limited to: (1) fines, restitution and/or imprisonment under 18 U.S.C. §1001; (2) treble damages and civil penalties under the False Claims Act (31 U.S.C. §3729 *et seq.*); (3) double damages and civil penalties under the Program Fraud Civil Remedies Act (31 U.S.C. §3801 *et seq.*); (4) civil recovery of award funds, (5) suspension and/or debarment from all Federal procurement and nonprocurement transactions (FAR Subpart 9.4 or 2 C.F.R. part 180); and (6) other administrative penalties including termination of SBIR/STTR awards.

Signature	Date __/__/__
Print Name (First, Middle, Last)	
Title	
Business Name	

ATTACHMENT 5
**CERTIFICATION FOR APPLICANTS THAT ARE MAJORITY-OWNED BY MULTIPLE VENTURE CAPITAL
OPERATING COMPANIES, HEDGE FUND OR PRIVATE EQUITY FIRMS**

Any small businesses that is majority-owned by multiple venture operating companies (VCOCs), hedge funds or private equity firms and are submitting an application for and SBIR funding agreement must complete this certification prior to submitting an application. This includes checking all of the boxes and having an authorized officer of the applicant sign and date the certification each time it is requested.

Please read carefully the following certification statements. The Federal government relies on the information to determine whether the business is eligible for a Small Business Innovation Research (SBIR) Program award and meets the specific program requirements during the life of the funding agreement. The definitions for the terms used in this certification are set forth in the Small Business Act, SBA regulations (13 C.F.R. Part 121), the SBIR Policy Directive and also any statutory and regulatory provisions referenced in those authorities.

If the funding agreement officer believes that the business may not meet certain eligibility requirements at the time of award, they are required to file a size protest with the U.S. Small Business Administration (SBA), who will determine eligibility. At that time, SBA will request further clarification and supporting documentation in order to assist in the verification of any of the information provided as part of a protest. If the funding agreement officer believes, after award, that the business is not meeting certain funding agreement requirements, the agency may request further clarification and supporting documentation in order to assist in the verification of any of the information provided.

Even if correct information has been included in other materials submitted to the Federal government, any action taken with respect to this certification does not affect the Government's right to pursue criminal, civil or administrative remedies for incorrect or incomplete information given in the certification. Each person signing this certification may be prosecuted if they have provided false information.

The undersigned has reviewed, verified and certifies that (all boxes must be checked):

(1) The applicant is NOT more than 50% owned by a single VCOC, hedge fund or private equity firm.

▪ Yes ▪ No

(2) The applicant is more than 50% owned by multiple domestic business concerns that are VCOCs, hedge funds, or private equity firms.

▪ Yes ▪ No

(3) I have registered with SBA at www.SBIR.gov as a business that is majority-owned by multiple VCOCs, hedge funds or private equity firms.

▪ Yes ▪ No

▪ I understand that the information submitted may be given to Federal, State and local agencies for determining violations of law and other purposes.

▪ All the statements and information provided in this form and any documents submitted are true, accurate and complete. If assistance was obtained in completing this form and the supporting documentation, I have personally reviewed the information and it is true and accurate. I understand

ATTACHMENT 5
**CERTIFICATION FOR APPLICANTS THAT ARE MAJORITY-OWNED BY MULTIPLE VENTURE CAPITAL
OPERATING COMPANIES, HEDGE FUND OR PRIVATE EQUITY FIRMS**

that, in general, these statements are made for the purpose of determining eligibility for an SBIR funding agreement and continuing eligibility.

- I understand that the certifications in this document are continuing in nature. Each SBIR funding agreement for which the small business submits an offer or application or receives an award constitutes a restatement and reaffirmation of these certifications.
- I understand that I may not misrepresent status as small business to: 1) obtain a contract under the Small Business Act; or 2) obtain any benefit under a provision of Federal law that references the SBIR Program.
- I am an officer of the business concern authorized to represent it and sign this certification on its behalf. By signing this certification, I am representing on my own behalf, and on behalf of the SBIR applicant or awardee, that the information provided in this certification, the application, and all other information submitted in connection with this application, is true and correct as of the date of submission. I acknowledge that any intentional or negligent misrepresentation of the information contained in this certification may result in criminal, civil or administrative sanctions, including but not limited to: (1) fines, restitution and/or imprisonment under 18 U.S.C. §1001; (2) treble damages and civil penalties under the False Claims Act (31 U.S.C. §3729 et seq.); (3) double damages and civil penalties under the Program Fraud Civil Remedies Act (31 U.S.C. §3801 et seq.); (4) civil recovery of award funds, (5) suspension and/or debarment from all Federal procurement and nonprocurement transactions (FAR Subpart 9.4 or 2 C.F.R. part 180); and (6) other administrative penalties including termination of SBIR/STTR awards.

<i>Signature</i>	<i>Date</i> __/__/__
<i>Print Name (First, Middle, Last)</i>	
<i>Title</i>	
<i>Business Name</i>	

**ATTACHMENT 6
OTHER TRANSACTION AGREEMENT**

***(TEMPLATE - Fixed Support Approach with a Nontraditional Defense
Performer -- No resource contribution)***

SBIR Other Transaction (OT) for Prototype Agreement

AGREEMENT

BETWEEN

(INSERT PERFORMER AND ADDRESS)

AND

**THE OFFICE OF NAVAL RESEARCH
875 NORTH RANDOLPH STREET
ARLINGTON, VA 22203-2114**

CONCERNING

(INSERT RESEARCH AND DEVELOPMENT TITLE)

Agreement No.: N00014-XX-3-XXXX
Purchase Requisition No.:
Total Amount of the Agreement: \$
Funds Obligated: \$
Authority: 10 U.S.C. § 2371b
Effective Date:

Line of Appropriation: AA \$

This Agreement is entered into between the United States of America, hereinafter called the Government, represented by The Office of Naval Research (ONR), and *(INSERT COMPANY NAME)* pursuant to and under United States Federal law.

FOR *(INSERT COMPANY NAME)*
Authorized Legal Entity

FOR THE GOVERNMENT
OFFICE OF NAVAL RESEARCH

(Signature)

(Signature)

(Name, Title)

(Date)

(Name, Title)

(Date)

**ATTACHMENT 6
OTHER TRANSACTION AGREEMENT**

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ARTICLE I: SCOPE OF THE AGREEMENT

1. Background

This Agreement is a Small Business Innovative Research (SBIR) Phase II award. The Program is as set forth in the Contractor's proposal, dated (*INSERT DATE*).

2. Definitions: In this Agreement, the following definitions apply:

A. Administrative Agreements Officer (AAO): An individual who has authority to administer an OT in coordination with the Agreements Officer, make decisions related to the delegated administration functions. If administrative functions are retained by the contracting activity, the Agreements Officer serves as the Administrative Agreements Officer.

B. Agreement: The body of this Agreement and Attachments 1-4, which are expressly incorporated in and made a part of the Agreement.

C. Agreements Officer (AO): An individual with authority to enter into, administer, or terminate OTs on behalf of the Government.

D. Agreements Officer Representative (AOR): An Individual appointed by the Agreements Officer to provide technical direction and monitor performance. Specific duties of the AOR are defined in Article IV.

E. Data: Recorded information, regardless of form or method of recording, which includes but is not limited to, technical data and software. The term does not include financial, administrative, cost, pricing or management information.

F. Foreign Firm or Institution: A firm or institution organized or existing under the laws of a country other than the United States, its territories, or possessions. The term includes, for purposes of this Agreement, any agency or instrumentality of a foreign government; and firms, institutions or business organizations which are owned or substantially controlled by foreign governments, firms, institutions, or individuals.

G. Government: The United States of America, as represented by ONR.

H. Government Purpose Rights: The rights to use, modify, release, perform, display, duplicate, or disclose Data, in whole or in part and in any manner, for Government purposes only, and to have or permit others to do so for Government purposes only.

I. Government Purpose: Any activity in which the United States Government is a party, including cooperative agreements with international or multi-national defense organizations, or sales or transfers by the United States Government to foreign

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governments or international organizations. Government purposes include competitive procurement, but do not include the rights to use, modify, reproduce, release, perform, display, or disclose technical data for commercial purposes or authorize others to do so.

J. Invention: Any invention or discovery which is or may be patentable or otherwise protectable under Title 35 of the United States Code.

K. Know-How: All information including, but not limited to discoveries, formulas, materials, inventions, processes, ideas, approaches, concepts, techniques, methods, software, programs, documentation, procedures, firmware, hardware, technical data, specifications, devices, apparatus and machines.

L. Made: Relates to any invention means the conception or first actual reduction to practice of such invention.

M. Party: Includes the Government (represented by ONR), or the Performer, or both.

N. Performer: *COMPANY NAME*.

O. Practical application: To manufacture, in the case of a composition of product; to practice, in the case of a process or method, or to operate, in the case of a machine or system; and, in each case, under such conditions as to establish that the invention is capable of being utilized and that its benefits are, to the extent permitted by law or Government regulations, available to the public on reasonable terms.

P. Program: Research and development being conducted by the Performer, as set forth in Article I, paragraph 3.

Q. Property: Any tangible personal property other than property actually consumed during the execution of work under this agreement. For purposes of this article, "property" does not include the deliverable prototype which is the (*INSERT DELIVERABLE*).

R. SBIR-OTA Data Rights: Means Limited Rights for Technical Data, including computer software documentation, and Restricted Rights for computer software. SBIR-OTA Data Rights survive for five years from the completion of the project under which they were generated, at which point they will convert to perpetual Government Purpose Rights.

S. Subject Invention: Any invention conceived or first actually reduced to practice in the performance of work under this Agreement.

T. Technology: Discoveries, innovations, Know-How and inventions, whether patentable or not, including computer software, recognized under U.S. law as

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intellectual creations to which rights of ownership accrue, including, but not limited to, patents, trade secrets, mask works and copyrights developed under this Agreement.

U. Unlimited Rights: Rights to use, modify, perform, display, duplicate, release, or disclose, Data in whole or in part, in any manner and for any purposes whatsoever, and to have or permit others to do so.

3. Scope

A. This Agreement is an “other transaction” pursuant to 10 U.S.C. § 2371b. The principal purpose of this Agreement is to engage in a research and development program for the development of a (*DESCRIBE PROTOTYPE*).

B. The Performer shall be responsible for performance of the work set forth in the Statement of Work incorporated in this Agreement as Attachment 1. The Performer shall submit or otherwise provide all documentation required by Attachment 2, Report and Data Deliverable Requirements.

4. Approval of Use of Human Subjects (*AS APPLICABLE*)

A. The work identified in SOW paragraphs [LIST] involves the use of human subjects. The foregoing work has been approved by the ONR HRPO for performance under this Agreement by the entities proposed.

OR

A. The work identified in SOW paragraphs [LIST] involves the use of human subjects. The foregoing work has been approved by the ONR HRPO for performance under this Agreement by the entities proposed except as follows: [LIST SPECIFICALLY] The Performer shall not perform any unapproved work until the Agreements Officer informs it in writing that the ONR HRPO has approved performance of such work.

OR

A. The work identified in SOW paragraphs [LIST] involves the use of human subjects. The foregoing work has NOT been approved by the ONR HRPO for performance under this Agreement by the entities proposed. The Performer shall not perform any of the foregoing such work until the Agreements Officer informs it in writing that the ONR HRPO has approved such work.

B. In the event the Performer intends to modify the work identified in paragraph a. above in any way (e.g. adding work, deleting work, change of approach, change in performer), the Performer shall not continue performance of such work, but shall stop such work and immediately inform the Agreements Officer of the intended modification. The Performer shall not perform any work to be modified until the Agreements Officer informs it in writing that the ONR HRPO has approved performance of such work. This

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clause does not affect the continued performance of any unmodified work.

C. Any milestone that includes unapproved work identified above will not be funded until HRPO approval is obtained. The Performer is responsible for submitting the necessary documents and for obtaining such approval within two weeks of the Government's notice of its intent to fund the respective Round. See also clause below concerning Use of Human Subjects.

ARTICLE II: TERM

1. Term of this Agreement

The period of performance of this Agreement shall be as set forth below.

Milestone 0001 - Round I

Performance Period: [NTE 6 months]

Deliverable(s): [Describe/cross reference to SOW. Deliverables will reflect proof that the concept proposed can meet all of the DON needs outlined in the topic and include the construction of an initial functioning prototype designed to meet DON needs.]

Firm-Fixed-Price: \$[NTE \$250,000]

Milestone 0002 - Round II Prototype Demonstration of Viability

Performance Period: [NTE 6 months]

Deliverable(s): [Describe/cross reference to SOW. Deliverables will reflect that the technology is suitable for further testing in anticipation of DON deployment into an operational environment and, as applicable, commercialization in the private sector.]

Firm-Fixed-Price: \$[NTE \$500,000]

Milestone 0003 - Round III Pilot Testing in an Operational Environment

Performance Period: [NTE 6 months]

Deliverable(s): [Describe/cross reference to SOW. Deliverables will reflect that the technology is suitable for further testing in anticipation of DON deployment into an operational environment and, as applicable, commercialization in the private sector.]

Firm-Fixed-Price: \$[NTE \$750,000]

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Milestone 0004 – *In-Scope Change* - Round IV Operational Test and Evaluation in Multiple User Scenarios

Performance Period: [TBD]

Deliverable(s): [Describe/cross reference to SOW.]

Firm-Fixed-Price: \$[TBD]

Milestones (Rounds) 1, 2, and 3 reflect a gated process to ensure that further investment is justified by an accelerated development process timeline with which the Performer is complying and that the technology developed is meeting the objectives described in the topic. Whether Milestones (Rounds) 2, 3, or 4 are funded will depend on the availability of SBIR funds and whether Rounds I, Round II, and Round III technology deliveries have met the objectives of the SOW. At the end of Round I, the technology should be suitable for testing and demonstration of viability in Round II. At the end of Round II, the technology should be suitable for further testing in anticipation of DON deployment into an operational environment and, as applicable, commercialization in the private sector.

The Government may fund a milestone (Round) under this Agreement by providing written notice to the Performer five days prior to the start of the milestone's performance period. If HRPO approval is required for work within the next milestone, the Government shall provide notice of its intent to fund the respective milestone an additional fourteen days in advance to provide the Performer an opportunity to obtain such approval. The notice of intent will not constitute a commitment by the Government to fund the milestone.

Absent clear evidence to the contrary, the funding of a milestone will serve as notice from the Agreements Officer to the Performer that the HRPO has approved the assurance as appropriate for the work identified in the clause entitled "Approval of Use of Human Subjects," and also that the HRPO has reviewed the protocol and accepted the IRB approval or determination for compliance with DON policies.

If the Performer desires an extension to the period of performance of this Agreement, the Performer shall submit a request in writing to the Agreements Officer. Any extension shall be formalized through modification of the Agreement by the Agreements Officer (AO) and the Performer. The Parties may not extend this Agreement for the purpose of awarding a follow-on production contract or transaction, as described in 10 USC 2371b

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(f). Provisions of this Agreement, which, by their express terms or by necessary implication, apply for periods of time other than specified herein, shall be given effect, notwithstanding this Article.

ARTICLE III: TERMINATION

1. Unilateral Termination: The Government may terminate this Agreement, in whole or in part, if the AO or AAO determines that such termination is in the Government's best interest. The AO or AAO shall provide written notice of the termination and its effective date to the Performer. The Government shall endeavor to consult with the Performer prior to issuance of written termination notice. Upon receipt of the Government's written termination notice, the Performer shall stop work in accordance with the direction provided in that notice.

2. Termination by Mutual Agreement: The Parties may agree to terminate this Agreement, in whole or in part, by written agreement. The Parties shall agree upon the termination conditions, including the effective date, and in the case of partial termination, the portion to be terminated.

3. Termination Settlement: The Government and the Performer should negotiate in good faith a reasonable and timely adjustment of all outstanding issues between the Parties as a result of termination, however in no account shall any commitment, costs, liability or negotiated settlement exceed the funding that is already obligated on the agreement. In the event of a termination of the Agreement, the Government shall have paid-up rights in Data as described in Article VIX, Data Rights. Failure of the Parties to agree to an equitable termination adjustment shall be resolved pursuant to Article VII, Disputes.

ARTICLE IV: MANAGEMENT OF THE PROJECT

1. Management and Program Structure

The Performer shall be responsible for the overall technical and program management of the Program, and technical planning and execution shall remain with the Performer. The ONR Agreements Officer's Representative (AOR) shall provide recommendations to Program developments and technical collaboration and be responsible for the review and verification of the milestones.

2. Program Management Planning Process

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Program planning will consist of an Annual Program Plan prepared by the Performer, with input and review by the Government, containing the detailed schedule of research activities and milestones. The Annual Program Plan will consolidate adjustments in the research schedule, including modification to prospective payable milestones. The Performer will submit periodic technical status and business status reports, in accordance with Attachment 2 in order to update ONR on Performer's performance under the Agreement.

A. Initial Program Plan: The Performer will follow the initial program plan that is contained in the Statement of Work (Attachment 1), and the Schedule of Milestones and Payments (Attachment 3).

B. Overall Program Plan Annual Review:

(1) The Performer, with Government input and review, will prepare a revised Annual Program Plan in the first quarter of each Agreement year, to be followed in that respective year. (For this purpose, each consecutive twelve-month period from, and including, the month of execution of this Agreement during which this Agreement shall remain in effect shall be considered an Agreement Year.) The Annual Program Plan will be presented and reviewed, at the discretion of the AOR, at an annual review which will be attended by the Performer and Government Personnel.

3. AOR Responsibilities

A. Performance of the work hereunder is subject to the technical direction of the AOR designated in this agreement. For the purposes of this article, technical direction includes the following:

(1) Direction to the Performer which shifts work emphasis between work areas or tasks, requires pursuit of certain lines of inquiry, fills in details or otherwise serves to accomplish the objectives described in the statement of work;

(2) Guidelines to the Performer which assist in the interpretation of drawings, specifications or technical portions of work description.

B. Technical direction must be within the general scope of work stated in the agreement. Technical direction may not be used to:

(1) Assign additional work under the Agreement;

(2) Increase or decrease the estimated agreement cost or the time required for Agreement performance; or

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(3) Change any of the terms, conditions or specifications of the agreement.

C. The only individual authorized to in any way amend or modify any of the terms of this agreement shall be the Agreements Officer. When, in the opinion of the Performer, any technical direction calls for effort outside the scope of the Agreement or inconsistent with this provision, the Performer shall notify the Agreements Officer in writing within ten working days after its receipt of that direction. The Performer shall not proceed with the work affected by the technical direction until the Performer is notified by the Agreements Officer that the technical direction is within the scope of the Agreement.

D. Nothing in the foregoing paragraphs may be construed to excuse the Performer from performing that portion of the work statement which is not affected by the disputed technical direction.

4. Modifications

A. Changes to this Agreement during the course of performance of the effort may be beneficial to program objectives. Recommendations for modifications, including justifications to support any changes to the Agreement will be documented in writing and submitted by the Performer to the ONR AOR with a copy to the ONR AO and AAO. This documentation will detail the technical, chronological, and financial impact of the proposed modification to the research program. The Performer and either the ONR AO or AAO shall approve any Agreement modification. The Government is not obligated to pay for additional or revised future milestones until the Schedule of Milestones and Payments (Attachment 3) is formally revised by the ONR AO and made part of this Agreement via a written modification.

B. Administrative Agreement modifications (e.g. incremental funding, changes in the paying office or appropriation data, changes to Government or the Performer's personnel identified in the Agreement, etc.) may be unilaterally executed by the AO or AAO.

C. The ONR AO and the AAO will be responsible for instituting all modifications to this Agreement.

ARTICLE V: AGREEMENT ADMINISTRATION

1. Unless otherwise provided in this Agreement, approvals permitted or required to be made by ONR may be made only by the ONR AO. Administrative and contractual matters under this Agreement shall be referred to the following representatives of the parties:

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A. Government Points of Contact:

Agreements Officer (AO):

(NAME)
(TITLE)
(PHONE NUMBER)
(EMAIL)

Agreements Officer's Representative (AOR):

(NAME)
(TITLE)
(PHONE NUMBER)
(EMAIL)

Administrative Agreements Officer (AAO):

(NAME) DODACC:
(ADDRESS)
(TITLE)
(PHONE NUMBER)
(EMAIL)

Patent Matters:

John Forrest, Patent Counsel of the Navy
Office of Naval Research
Corporate Counsel (Code OOC),
875 North Randolph Street, Arlington, VA 22203-1995

Phone: (703) 696-4000

Email: ONR.NCR.BDCC.list.invention.reports@navy.mil.

B. Performer Points of Contact

Performer's Administrative/Contracting:

(NAME)
(TITLE)
(PHONE NUMBER)
(EMAIL)

Performer's Program Manager:

(NAME)
(TITLE)
(PHONE NUMBER)
(EMAIL)

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Each party may change its representatives named in this Article by written notification to the other party. The Government will affect the change as stated in Article IV, paragraph 4.

ARTICLE VI: OBLIGATION AND PAYMENT

1. Obligation

The Government's liability to make payments to the Performer is limited to only those funds obligated under the Agreement. ONR may obligate funds to the Agreement incrementally.

ACRN	List of Sub Number Line Item (SLIN)	Line of Accounting (LOA)	Amount Obligated
AA	000101	XXXX	\$X
AB	000102	XXXX	\$X
Total Obligated Amount			\$X

2. Payments

A. The Parties agree that fixed payments will be made for the completion of milestones. These payments reflect value received by the Government toward the accomplishment of the research goals of this Agreement. The Performer shall document the accomplishments of each milestone by submitting or otherwise providing the Milestone Reports required by Attachment 2.

B. Limitation of Funds: In no case shall the Government's financial liability exceed the amount obligated under this Agreement. The Government's liability for any termination costs is limited to only those funds obligated under the Agreement.

C. Payments will be made by the Defense Finance and Accounting Services office, as indicated below, within thirty (30) calendar days of an accepted invoice in WAWF. WAWF is a secure web-based system for electronic invoicing, receipt and acceptance. The WAWF application enables electronic form submission of invoices, government inspection, and acceptance documents in order to support DoD's goal of moving to a paperless acquisition process. Authorized DoD users are notified of pending actions by e-mail and are presented with a collection of documents required to process the contracting or financial action. It uses Public Key Infrastructure (PKI) to electronically bind the digital signature to provide non-reputable proof that the user electronically signed the document with the contents

D. The Performer is required to utilize the WAWF system when processing

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invoices under this Agreement. The Performer shall (i) ensure an Electronic Business Point of Contact is designated in System for Award Management (SAM) at <http://www.sam.gov> and (ii) register to use WAWF-RA at the <https://wawf.eb.mil> site, within ten (10) calendar days after award of this Agreement. Step-by-step procedures to register are available at the <https://wawf.eb.mil> site. The Performer is directed to use the 2-in-1 format when processing invoices.

- (1) For the Issue By DoDAAC, enter N00014
- (2) For the Admin DoDAAC, *(insert)*
- (3) For the Service Acceptor, *(insert)*
- (4) Leave the Inspect by DoDAAC, Ship From Code DoDAAC, Service Approver, and LPO DoDAAC fields blank unless otherwise directed by the Agreements Officer.
- (5) The following guidance is provided for invoicing processed under this Agreement through WAWF:
 - a) The AOR identified in Article V, "Agreement Administration" shall continue to formally inspect and accept the deliverables/ milestones. To the maximum extent practicable, the AOR shall review the deliverable(s)/ milestone report(s) within 30 days of submission and either: 1) provide a written notice of rejection to the Performer, the AO, and the AAO which includes feedback regarding deficiencies requiring correction, or 2) written notice of acceptance to the Performer, AO, and AAO.
 - b) The Performer shall send an email notice to the AOR and upload the AOR milestone approval as an attachment upon submission of an invoice in WAWF (this can be done from within WAWF).
 - c) The AOR will accept and approve the invoice in WAWF.
 - d) Payments shall be made by DFAS-*(INSERT APPROPRIATE DFAS OFFICE NAME AND DODAAC)*.
 - e) The Performer agrees, when entering invoices entered in WAWF to utilize the contracting line item number (CLIN) and accounting classification reference number (ACRN) associated with each milestone as delineated at Attachment 3. The description of the CLIN shall include reference to the associated milestone number along with other necessary descriptive information. The Performer

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agrees that the Government may reject invoices not submitted in accordance with this provision

(6) Payee Information: As identified at SAM.

- a) Cage Code:
- b) DUNS:
- c) TIN:

E. Financial Records and Reports:

(1) The Performer shall maintain adequate records to account for all funding under this Agreement. Upon completion or termination of this Agreement, whichever occurs earlier, the Performer shall furnish to the AO a copy of the Final Report to the AO required by Attachment 2. The Performer's relevant financial records are subject to examination or audit on behalf of ONR by the Government for a period not to exceed three (3) years after expiration of the term of this Agreement. The AO or designee shall have direct access to sufficient records and information of the Performer, to ensure full accountability for all funding under this Agreement. Such audit, examination, or access shall be performed during business hours on business days upon prior written notice and shall be subject to the security requirements of the audited party.

(2) To the extent that the total government payments under the Agreement exceed \$5,000,000, the Comptroller General of the United States, in its discretion, shall have access to and the right to examine records of any party to the Agreement or any entity that participates in the performance of this Agreement that directly pertain, to and involve transactions relating to, the Agreement for a period of three (3) years after final payment is made. This requirement shall not apply with respect to any party to this Agreement or any entity that participates in the performance of the Agreement, or any subordinate element of such party or entity, that, in the year prior to the date of the Agreement, has not entered into any other contract, grant, cooperative agreement, or other transaction agreement that provides for audit access to its records by a government entity in the year prior to the date of this Agreement. The terms of this paragraph shall be included in all sub-agreements/contracts to the Agreement.

ARTICLE VII: DISPUTES

1. General

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The Parties shall communicate with one another in good faith and in a timely and cooperative manner when raising issues under this Article.

2. Dispute Resolution Procedures

A. Any disagreement, claim or dispute between ONR and the Performer concerning questions of fact or law arising from or in connection with this Agreement, and, whether or not involving an alleged breach of this Agreement, may be raised only under this Article.

B. Whenever disputes, disagreements, or misunderstandings arise, the Parties shall attempt to resolve the issue(s) involved by discussion and mutual agreement as soon as practicable.

C. Failing resolution by mutual agreement, the aggrieved Party shall document the dispute, disagreement, or misunderstanding by notifying the other Party in writing of the relevant facts, identifying unresolved issues, specifying the clarification or remedy sought, and documenting the rationale as to why the clarification/remedy is appropriate. Within ten (10) working days after providing notice to the other Party, the aggrieved Party may, in writing, request a decision by the Agreements Officer.

D. Agreements Officer Decisions

(1) Upon receipt of a written request for a decision, the AO shall conduct a review of the matter in dispute. To aid in the AO's review, the other Party shall submit a written position to the AO on the matter in dispute within twenty (20) calendar days after notification that an AO decision has been requested. Within sixty (60) calendar days after receipt of a written request for a decision, the AO shall:

a) Provide a written decision to the Parties, which shall include the basis for the decision and relevant facts upon which the decision is based; or,

b) Notify the Parties of a date when the decision will be rendered. The notice shall address why additional time is needed and what, if any, additional information is required from the Parties to adjudicate the dispute.

(2) The AO decision is final and binding, unless a Party shall, within thirty (30) calendar days, request further review as provided by this article.

3. Formal Administrative Appeals

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A. The Director of Contracts, Grants, and Acquisitions (Code 02) is ONR's Appeal Authority to decide formal, administrative appeals under this Agreement. If the Director of Contracts, Grants, and Acquisitions (Code 02) is unable to serve in this capacity, the Executive Director (Code 01) shall so serve.

B. An aggrieved Party may appeal an AO decision within thirty (30) calendar days of receipt of that decision by filing a written notice of appeal with the Appeals Authority and the AO.

C. Appeal File. Within thirty (30) calendar days of receipt of the notice of appeal, the AO shall forward to the Appeal Authority the appeal file, which shall include copies of all documents relevant to the appeal. The Appeal Authority may permit the Parties to supplement the file with additional memoranda in support of their respective positions, and may request additional information from the Parties as necessary.

D. Decision. The appeal shall be decided solely on the basis of the written record; The Appeal Authority shall issue a written decision within sixty (60) days of receipt of the Appeal File, or notify the Parties of a date when the decision will be rendered.

E. Representation. A Party may be represented by counsel or any other designated representative in any dispute or appeal brought pursuant to this section, as long as the representative is not otherwise prohibited by law or regulation from appearing before ONR.

F. Upon receipt of an Appeals Authority decision, either Party may pursue any right or remedy provided by law. Alternatively, the Parties may agree to explore and establish an Alternative Disputes Resolution Procedure to resolve this dispute.

4. Limitation of Liability

The Government does not waive its sovereign immunity except as otherwise provided by law. The Performer is solely responsible for any damages which may arise from any suit, action, or claim related to performance under this Agreement, and for any costs from or incidental to these suits, actions or claims, including but not limited to settlement and defense costs, except to the extent the Government has waived its sovereign immunity under the Federal Torts Claims Act or other express provisions of law. Further, the Performer agrees that it shall not pursue litigation or any other judicial or administrative recourse against the Government or take any action to enter the Government as party to any suit, action, or claim in which the Performer may become involved except as otherwise provided herein.

ARTICLE VIII: RIGHTS IN INVENTIONS AND PATENTS

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1. Allocation of Principal Rights

A. The Performer has the option of electing to retain title to each Subject Invention consistent with the provisions of this Article.

B. With respect to any Subject Invention in which the Performer retains title, the Government shall have a nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced on behalf of the United States the Subject Invention throughout the world.

2. Invention Disclosure, Election of Title, and Filing of Patent Application

A. The Performer shall disclose each Subject Invention to the ONR POC for Patent Matters designated in Article V, Agreement Administration, within two (2) months after the inventor discloses it in writing to his company personnel responsible for patent matters. The disclosure to ONR shall be in the form of a written report and shall identify the Agreement and circumstances under which the Invention was made and the identity of the inventor(s). It shall be sufficiently complete in technical detail to convey a clear understanding, to the extent known at the time of the disclosure, of the nature, purpose, operation, and the physical, chemical, biological, or electrical characteristics of the Invention. The disclosure shall also identify any publication, sale, or public use of the invention and whether a manuscript describing the Invention has been submitted and/or accepted for publication at the time of disclosure.

B. The Performer shall notify the ONR POC for Patent Matters, in writing, within eight (8) months of disclosure to ONR whether it elects to retain title to such invention. However, in any case where publication, sale, or public use has initiated the one-year statutory period wherein valid patent protection can still be obtained in the United States, the period for such notice may be shortened by ONR to a date that is no more than sixty (60) calendar days prior to the end of the statutory period.

C. The Performer shall file either a provisional or non-provisional patent application on a Subject Invention to which it elects to retain title within one (1) year after election of title or, if earlier, prior to the end of the statutory period wherein valid patent protection can be obtained in the United States after a publication, or sale, or public use. If the Performer files a provisional application, it shall file a non-provisional application within 10 months of the filing of the provisional application. The Performer may elect to file patent applications in additional countries, including the European Patent Office and the Patent Cooperation Treaty, within either ten (10) months of the corresponding initial patent application (whether provisional or non-provisional) or six (6) months from the date permission is granted by the Commissioner for Patents to file foreign patent applications, where such filing has been prohibited by a Secrecy Order.

D. The Performer shall notify the ONR POC for Patent Matters of any decisions

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not to continue the prosecution of a patent application, pay maintenance fees, or defend in a reexamination or opposition proceedings on a patent, in any country, not less than thirty (30) calendar days before the expiration of the response period required by the relevant patent office.

E. Requests for extension of the time for disclosure election, and filing under Article VIII, may be granted at ONR's discretion after considering the circumstances of the Performer and the overall effect of the extension.

F. The Performer shall submit to the ONR POC for Patent Matters annual listings of Subject Inventions. At the completion of the Agreement, the Performer shall submit a comprehensive listing of all subject inventions identified during the course of the Agreement and the current status of each.

3. Conditions When the Government May Obtain Title

A. Upon ONR's written request, the Performer shall convey title to any Subject Invention to "the United States Government, as represented by the Secretary of the Navy" under any of the following conditions:

- (1) If the Performer fails to disclose or elects not to retain title to the Subject Invention within the times specified in Paragraph 2 of this Article; however, ONR may only request title within sixty (60) calendar days after learning of the failure of the Performer to disclose or elect within the specified times;
- (2) In those countries in which the Performer fails to file patent applications within the times specified in Paragraph 2 of this Article; however, if the Performer has filed a patent application in a country after the times specified in Paragraph 2 of this Article, but prior to its receipt of the written request by ONR, the Performer shall continue to retain title in that country; or
- (3) In any country in which the Performer decides not to continue the prosecution of any application for, to pay the maintenance fees on, or defend in reexamination or opposition proceedings on, a patent on a Subject Invention.

4. Minimum Rights to the Performer and Protection of the Performer's Right to File.

A. The Performer shall retain a nonexclusive, royalty-free license throughout the world in each subject invention to which the Government obtains title, except if the Performer fails to disclose the Subject Invention within the times specified in Paragraph

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2 of this Article. The Performer's license extends to its domestic and Canadian subsidiaries and affiliates within the corporate structure of which the Performer is a part, if any, and includes the right to grant licenses of the same scope to the extent that the Performer was legally obligated to do so at the time the Agreement was awarded. The license is transferable only with the approval of ONR, except when transferred to the successor of that part of the business to which the Subject Invention pertains. ONR approval for license transfer shall not be unreasonably withheld.

B. The Performer's domestic license may be revoked or modified by ONR to the extent necessary to achieve expeditious practical application of the Subject Invention pursuant to an application for an exclusive license submitted consistent with appropriate provisions at 37 C.F.R. Part 404. This license shall not be revoked in that field of use or the geographical areas in which the Performer has achieved practical application and continues to make the benefits of the Subject Invention reasonably accessible to the public. The license in any foreign country may be revoked or modified at the discretion of ONR to the extent the Performer, its licensees, or the subsidiaries or affiliates have failed to achieve practical application in that foreign country.

C. Before revocation or modification of the license, ONR shall furnish the Performer a written notice of its intention to revoke or modify the license, and the Performer shall be allowed thirty (30) calendar days (or such other time as may be authorized for good cause shown) after the notice to show cause why the license should not be revoked or modified.

5. Action to Protect the Government's Interest

A. The Performer agrees to execute or to have executed and promptly deliver to ONR all instruments necessary to (i) establish or confirm the rights the Government has throughout the world in those Subject Inventions to which the Performer elects to retain title, and (ii) convey title to the United States Government, as represented by the Secretary of the Navy when requested under Paragraph 3 of this Article and to enable the Government to obtain patent protection throughout the world in that Subject Invention.

B. The Performer agrees to require by written agreement with its employees, other than clerical and non-technical employees, to disclose promptly in writing to personnel identified as responsible for the administration of patent matters and in a format suggested by the Performer each Subject Invention in order that the Performer can comply with the disclosure provisions of Paragraph 2 of this Article. The Performer shall instruct employees, through employee agreements or other suitable educational programs, on the importance of reporting inventions in sufficient time to permit the filing of patent applications prior to United States or foreign statutory bars.

C. The Performer shall require, by written agreement with its employees

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performing work under this Agreement, other than clerical and non-technical employees, pre-assignment of all Subject Inventions.

D. The Performer shall include, within the specification of any United States patent application and any patent issuing thereon covering a subject invention, the following statement:

This invention was made with Government support under Agreement No. N00014-XX-9-XXXX, awarded by ONR. The Government has certain rights in the invention.

6. Lower Tier Agreements

The Performer shall include this Article, suitably modified to identify the Parties, in all subcontracts or lower tier agreements, regardless of tier, for experimental, developmental, or research work.

7. Reporting on Utilization of Subject Inventions

A. The Performer agrees to submit, during the term of the Agreement, an annual report on the utilization of a Subject Invention or on efforts at obtaining such utilization that are being made by the Performer or its licensees or assignees. Such reports shall include information regarding the status of development, date of first commercial sale or use, gross royalties received by the Performer, and such other data and information as the agency may reasonably specify. The Performer also agrees to provide additional reports as may be requested by ONR in connection with any march-in proceedings undertaken by ONR in accordance with Paragraph 9 of this Article. ONR agrees it shall not disclose such information to persons outside the Government without permission of the Performer, unless required by law.

B. All required reporting shall be accomplished, to the extent possible, using the i-Edison reporting website: <https://s-edison.info.nih.gov/iEdison/>. To the extent any such reporting cannot be carried out by use of i-Edison, reports and communications shall be submitted to the ONR POC for Patent Matters.

8. Preference for American Industry

Notwithstanding any other provision of this clause, neither the Performer nor any assignee shall grant to any person the exclusive right to use or sell any Subject Invention in the United States unless such person agrees that any product embodying the Subject Invention or produced through the use of the subject invention shall be manufactured substantially in the United States. However, in individual cases, the requirements for such an agreement may be waived by ONR upon a showing by the

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Performer that reasonable but unsuccessful efforts have been made to grant licenses on similar terms to potential licensees that would be likely to manufacture substantially in the United States or that, under the circumstances, domestic manufacture is not commercially feasible.

9. March-in Rights

A. The Performer agrees that, with respect to any Subject Invention in which it has retained title, ONR has the right to require the Performer, an assignee, or exclusive licensee of a Subject Invention to grant a non-exclusive license to a responsible applicant or applicants, upon terms that are reasonable under the circumstances, and if the Performer, assignee, or exclusive licensee refuses such a request, ONR has the right to grant such a license itself if ONR determines that:

B. Such action is necessary because the Performer or assignee has not taken effective steps, consistent with the intent of this Agreement, to achieve practical application of the Subject Invention;

C. Such action is necessary to alleviate health or safety needs which are not reasonably satisfied by the Performer, assignee, or their licensees;

D. Such action is necessary to meet requirements for public use and such requirements are not reasonably satisfied by the Performer, assignee, or licensees; or

E. Such action is necessary because the agreement required by Paragraph 8 of this Article has not been obtained or waived or because a licensee of the exclusive right to use or sell any Subject Invention in the United States is in breach of such Agreement.

ARTICLE IX: DATA RIGHTS

2.1 The Awardee grants or shall obtain for the Government the following royalty-free, world-wide, nonexclusive, irrevocable license rights in technical data and noncommercial computer software. The Awardee retains all rights not granted to the Government.

- a. Unlimited Rights. The Government shall have unlimited rights in Technical Data (other than SBIR-OTA Data during the SBIR-OTA Data Protection Period) that pertain to a noncommercial item, component, or process, and are:
 - 1. Form, fit and function data;
 - 2. Necessary for installation, operation, maintenance, or training purposes (other than detailed manufacturing or process data);
 - 3. Corrections or changes to Government-furnished data;
 - 4. Publicly available without restriction or available to the Government with unlimited rights; or

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5. Data with expired restrictions on Government use and distribution.

b. The Government shall also have Unlimited Rights in:

1. Corrections or changes to computer software, including SBIR-OTA Data, furnished by the Government;
2. Computer Software, including SBIR-OTA Data, publicly available or available to the Government with unlimited rights; and
3. Computer software, including SBIR-OTA Data, with expired restrictions on Government use and distribution.

c. During the SBIR-OTA Data Right Protection Period, the Government shall also have Unlimited Rights in SBIR-OTA Data, including computer software and technical data, that pertain to a noncommercial item, component, or process, and are:

1. Form, Fit and Function data;
2. Necessary for installation, operation, maintenance, or training purposes (other than detailed manufacturing or process data);
3. Corrections or changes to Government-furnished data; or
4. Publicly available without restriction or available to the Government with Unlimited Rights

b. Limited Rights. Unless the Government has Unlimited Rights in accordance with subparagraphs a, b, or c, the Government shall have Limited Rights in technical data that pertain to noncommercial items, components, or processes developed exclusively at private expense and are so marked. If technical data in which the Government has Limited Rights are transferred or disclosed outside the Government for the purposes of emergency repair or overhaul, the Government shall require the technical data Awardee to destroy the technical data and all copies upon completion of work and to notify Awardee of the destruction.

c. Restricted Rights. The Government shall have restricted rights in noncommercial computer software required to be delivered or otherwise provided that was developed exclusively at private expense.

d. License Rights in Commercial Computer Software and Commercial Computer Software Documentation. The Government shall have the rights provided in the license agreement customarily provided to the public by the Awardee, unless the such license agreement is inconsistent with Federal procurement law or do not otherwise satisfy user needs.

e. License Rights in Technical Data Pertaining to a Commercial Item

- (a) The Government shall have Commercial Item Technical Data Rights in Technical Data pertaining to a Commercial Item

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f. The Awardee agrees that the Government, and other persons to whom the Government may have released or disclosed technical data delivered or otherwise furnished under this Agreement, shall have no liability for any release or disclosure of data, including, but not limited to Commercial Computer Software, Commercial Computer Software Documentation, and Technical Data pertaining to a Commercial Item, that are not marked to indicate that such data are licensed data subject to use, modification, reproduction, release, performance, display, or disclosure restrictions.

(d) The Awardee agrees that the Government, and other persons to whom the Government may have released or disclosed technical data delivered or otherwise furnished under this Agreement, shall have no liability for any release or disclosure of technical data that are not marked to indicate that such data are licensed data subject to use, modification, reproduction, release, performance, display, or disclosure restrictions.

2.2. Prior Government Rights. Technical data that will be delivered, furnished, or otherwise provided to the Government under this award, in which the Government has previously obtained rights, shall be delivered, furnished, or provided with the pre-existing rights, unless the parties have explicitly agreed otherwise; or any restrictions on the Government's right to use, modify, reproduce, release, perform, display, or disclose the data have expired or no longer apply.

2.3 The Awardee shall not, without written approval of the Agreements Officer, incorporate or deliver any copyrighted data, computer software or computer software documentation in which necessary license rights have not been obtained. The Government shall retain its rights in the unchanged portions of any delivered computer software or computer software documentation that the Awardee uses to prepare, or includes in, derivative computer software or computer software documentation.

2.4 The Awardee must identify in an attachment to the Agreement and mark all data, computer software, and computer software documentation to be delivered under this Agreement with restrictions on use, release, or disclosure. Throughout the performance of this Agreement, the Awardee, its SubAwardees and suppliers that will deliver technical data, computer software, or computer software documentation with less than unlimited rights must have, maintain, and follow written procedures to assure that the restrictive markings are justified and keep records of the procedures. The Government may ignore or, at the Awardee's expense, correct or strike if a marking is determined to be unjustified. This paragraph does not apply to restrictions based solely on copyright. Additionally, this paragraph's requirement to identify, in an attachment, Data to be

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delivered with less than Unlimited Rights does not apply to SBIR-OTA Data generated under this award.

2.5 The Awardee shall use this article in its subagreements, shall not change the rights provided by this Agreement, and shall not use its power to award contracts and enter into agreements to obtain rights from SubAwardees in technical data, computer software or computer software documentation.

2.6 Notwithstanding other provisions in this Agreement, the Awardee agrees, with respect to data generated or developed under this Agreement, the Government may, within two (2) years after completion or termination of this Agreement, require delivery of data and receive unlimited rights.

3.0 March-In Rights

(1) In the event the Government chooses to exercise its March-in Rights, as defined in Article VIII, section 9 of this Agreement, the Awardee agrees, upon written request from the Government, to deliver at no additional cost to the Government, all Data necessary to achieve practical application within sixty (60) calendar days from the date of the written request. The Government shall retain Unlimited Rights, as defined in Article I., to this delivered Data.

(2) To facilitate any potential deliveries, the Awardee agrees to retain and maintain in good condition until two (2) years after completion or termination of this Agreement, all Data necessary to achieve practical application of any Subject Invention as defined in Article I.

4.0 Marking of Data

1.1 Limited Rights Legend. Any Technical Data delivered to the Government with Limited Rights shall be marked with the following legend:

LIMITED RIGHTS
Agreement N00014-XX-X-XXXX
Awardee Name
Awardee Address

The Government's rights to use, modify, reproduce, release, perform, display, or disclose these technical data are restricted as set forth in the definition of Limited Rights in Agreement N00014-XX-X-XXXX .
Any reproduction of technical data or portions thereof

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marked with this legend must also reproduce the markings. Any person, other than the Government, who has been provided access to such data must promptly notify the above named Awardee.

1.2 Restricted Rights Legend. Any Noncommercial Computer Software delivered to the Government with Restricted Rights shall be marked with the following legend:

RESTRICTED RIGHTS
Agreement N00014-XX-X-XXXX
Awardee Name
Awardee Address

The Government's rights to use, modify, reproduce, release, perform, display, or disclose this software are restricted as set forth in the definition of Restricted Rights in Agreement N00014-XX-X-XXXX . Any reproduction of computer software or portions thereof marked with this legend must also reproduce the markings. Any person, other than the Government, who has been provided access to such software must promptly notify the above named Awardee.

1.3 SBIR-OTA Data Rights Legend. Except for technical data or computer software in which the Government has acquired Unlimited Rights per Article IX, section 2.1.a of this Agreement, technical data or computer software generated under this Agreement shall be marked with the following legend:

SBIR-OTA DATA RIGHTS
Awardee Name:
Awardee Address:
Expiration of SBIR Data Rights Period:

During the SBIR Data Rights Protection Period set forth in Agreement N00014-XX-X-XXXX, the Government's rights to use, modify, reproduce, release, perform, display, or disclose technical data or computer software marked with this legend are restricted as set forth in the definition of SBIR_OTA Data Rights set forth in that same Agreement. The Government shall have perpetual Government

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Purpose Rights, as defined in that same Agreement, after the expiration date shown above. Any reproduction of technical data, computer software, or portions thereof marked with this legend must also reproduce the markings.

1.4 Pre-existing Data Markings. If the terms of a prior contract or license permitted the awardee to restrict the Government's rights to use, modify, reproduce, release, perform, display, or disclose technical data or computer software deliverable under this award, and those restrictions are still applicable, the awardee may mark such data with the appropriate restrictive legend for which the data qualified under the prior award or license.

1.5 All technical data and computer software delivered without an appropriate legend are delivered with Unlimited Rights.

1.0 Definitions

a. "Commercial Computer Software" means software developed or regularly used for nongovernmental purposes which has been sold, leased, or licensed to the public or has been offered to the public or will be offered in time to satisfy the delivery requirements or requires minor modification to meet the requirements of this Agreement.

b. "Commercial Item" means:

(1) Any item, other than real property, that is of a type customarily used by the general public or by non-governmental entities for purposes other than governmental purposes, and-

(i) Has been sold, leased, or licensed to the general public; or

(ii) Has been offered for sale, lease, or license to the general public;

(2) Any item that evolved from an item described in paragraph (1) of this definition through advances in technology or performance and that is not yet available in the commercial marketplace, but will be available in the commercial marketplace in time to satisfy the delivery requirements under a Government solicitation;

(3) Any item that would satisfy a criterion expressed in paragraphs (1) or (2) of this definition, but for-

(i) Modifications of a type customarily available in the commercial marketplace; or

(ii) Minor modifications of a type not customarily available in the commercial marketplace made to meet Federal Government requirements;

(4) Any combination of items meeting the requirements of paragraphs (1), (2), or (3) of this definition that are of a type customarily combined and sold in combination to the general public;

(5) Any item, combination of items referred to in paragraphs (1) through (3) of this

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definition, notwithstanding the fact that the item, combination of items, or service is transferred between or among separate divisions, subsidiaries, or affiliates of a contractor; or

(6) A nondevelopmental item, if the procuring agency determines the item was developed exclusively at private expense and sold in substantial quantities, on a competitive basis, to multiple State and local governments.

(7) Any other item that meets the definition of a “commercial item” set forth at Federal Acquisition Regulation 2.101.

c. “Commercial Item Technical Data Rights” means the Government’s right to:

(1) use, modify, reproduce, release, perform, display, or disclose technical data within the Government only, provided that the Government does not—

a. Use the technical data to manufacture additional quantities of the commercial items; or

b. Release, perform, display, disclose, or authorize use of the technical data outside the Government without the Contractor's written permission unless a release, disclosure, or permitted use is necessary for emergency repair or overhaul of the commercial items furnished under this contract, or for performance of work by covered Government support contractors.

(2) Release or disclose Technical data covered by paragraph (1)b of this definition to covered Government support contractors, provided that:

a. The Awardee (or the party asserting restrictions as identified in a restrictive legend) is notified of such release or disclosure and provided an opportunity to require each such covered Government support contractor to enter into a non-disclosure agreement directly with the Awardee (or the party asserting restrictions) regarding the covered Government support contractor’s use of such data, or alternatively, to waive in writing the requirement for a non-disclosure agreement. Any such non-disclosure agreement shall address the restrictions on the covered Government support contractor's use of the data as set forth in the clause at DFARS [252.227-7025](#), Limitations on the Use or Disclosure of Government-Furnished Information Marked with Restrictive Legends. The non-disclosure agreement shall not include any additional terms and conditions unless mutually agreed to by the parties to the non-disclosure agreement.

d. "Computer Database" means a collection of data recorded in a form capable of being processed by a computer.

e. "Computer Program" means a set of instructions, rules or routines recorded in a form that is capable of causing a computer to perform a specific operation or series of operations.

f. "Computer Software" means computer programs, source code, source code listings, object code listings, design details, algorithms, processes, flow charts, formulae and related material that would enable the software to be reproduced, recreated, or

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recompiled. Computer software does not include computer data bases or computer software documentation.

g. "Computer Software Documentation" means owner's manuals, user's manuals, installation instructions, operating instructions, and other similar items, regardless of storage medium, that explain the capabilities of the computer software or provide instructions for using the software.

h. "Covered Government support contractor" means a contractor (other than a litigation support contractor covered by DFARS [252.204-7014](#)) under a contract, the primary purpose of which is to furnish independent and impartial advice or technical assistance directly to the Government in support of the Government's management and oversight of a program or effort (rather than to directly furnish an end item or service to accomplish a program or effort), provided that the contractor—

(1) Is not affiliated with the prime contractor or a first-tier subcontractor on the program or effort, or with any direct competitor of such prime contractor or any such first-tier subcontractor in furnishing end items or services of the type developed or produced on the program or effort; and

(2) Receives access to the technical data or computer software for performance of a Government contract that contains the clause at DFARS [252.227-7025](#), Limitations on the Use or Disclosure of Government-Furnished Information Marked with Restrictive Legends.

i. "Detailed Manufacturing or Process Data" means technical data that describe the steps, sequences, and conditions of manufacturing, processing or assembly used by the manufacturer to produce an item or component or to perform a process.

j. "Developed" means that an item, component, or process exists and is workable.

k. "Developed Exclusively at Private Expense" means development was accomplished entirely with costs charged to indirect cost pools, costs not allocated to a government contract either as cost incurred or as required cost-sharing, or any combination thereof, or with costs not allocated to this Agreement. Technical Data pertaining to a Commercial Item are assumed to have been developed exclusively at private expense.

l. "Developed Exclusively with Government Funds" means development was accomplished with no expense by the Awardee.

m. "Development with Mixed Funding" means the development was accomplished at partial expense by the Awardee.

n. "Form, Fit and Function Data" means data that describes the required overall physical, functional, and performance characteristics of an item, component or process to the extent necessary to permit identification of physically and functionally interchangeable items.

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o. "Government Purpose" means any activity in which the United States Government is a party.

p. "Government Purpose Rights" means the rights to: 1.) use, modify, reproduce, release, perform, display, or disclose technical data, computer software and/or computer software documentation within the Government without restriction; and 2.) release or disclose technical data, computer software and/or computer software documentation outside the Government and authorize persons to whom release or disclosure has been made to use, modify, reproduce, release, perform, display, or disclose that technical data, computer software and/or computer software documentation for United States government purposes.

q. "Generated," with respect to technical data or computer software, means first created in the performance of this agreement.

r. "Item" includes components or processes, and does not include computer software.

s. "Limited Rights" means the rights to use, modify, reproduce, release, perform, display, or disclose technical data, in whole or in part, within the Government. The Government may not, without the written permission of the party asserting limited rights, release or disclose the technical data outside the Government, use the technical data for manufacture, or authorize the technical data to be used by another party, except that the Government may reproduce, release, or disclose such data or authorize the use or reproduction of the data by persons outside the Government if—

(1) The production, release, disclosure, or use is—

(a) Necessary for emergency repair and overhaul; or

(b) A release or disclosure to—

(i) A covered Government support contractor in performance of its covered Government support contracts for use, modification, reproduction, performance, display, or release or disclosure to a person authorized to receive limited rights technical data; or

(ii) A foreign government, of technical data other than detailed manufacturing or process data, when use of such data by the foreign government is in the interest of the Government and is required for evaluational or informational purposes;

(c) The Awardee of the technical data is subject to a prohibition on the further reproduction, release, disclosure, or use of the technical data; and

(d) The Awardee asserting the restriction is notified of such reproduction, release, disclosure, or use.

t. "Minor Modification" means a modification that does not significantly alter the nongovernmental function or purpose of the software or is of the type customarily provided in the commercial marketplace.

u. "Noncommercial Computer Software" means software that does not qualify as commercial computer software.

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v. "Restricted Rights" apply only to noncommercial computer software and mean the Government's rights to—

(1) Use a computer program with one computer at one time. The program may not be accessed by more than one terminal or central processing unit or time shared unless otherwise permitted by this contract;

(2) Transfer a computer program to another Government agency without the further permission of the Contractor if the transferor destroys all copies of the program and related computer software documentation in its possession and notifies the licensor of the transfer. Transferred programs remain subject to the provisions of this clause;

(3) Make the minimum number of copies of the computer software required for safekeeping (archive), backup, or modification purposes;

(4) Modify computer software provided that the Government may—

(a) Use the modified software only as provided in paragraphs (1) and (3) of this definition; and

(b) Not release or disclose the modified software except as provided in paragraphs (2), (5), (6), and (7) of this definition;

(5) Permit contractors or subcontractors performing service contracts (see 37.101 of the Federal Acquisition Regulation) in support of this or a related contract to use computer software to diagnose and correct deficiencies in a computer program, to modify computer software to enable a computer program to be combined with, adapted to, or merged with other computer programs or when necessary to respond to urgent tactical situations, provided that—

(a) The Government notifies the party which has granted restricted rights that a release or disclosure to particular contractors or subcontractors was made;

(b) Such contractors or subcontractors are subject to the non-disclosure agreement at [227.7103-7](#) of the Defense Federal Acquisition Regulation Supplement or are Government contractors receiving access to the software for performance of a Government contract that contains the clause at [252.227-7025](#), Limitations on the Use or Disclosure of Government-Furnished Information Marked with Restrictive Legends;

(c) The Government shall not permit the Awardee to decompile, disassemble, or reverse engineer the software, or use software decompiled, disassembled, or reverse engineered by the Government pursuant to paragraph (4) of this definition, for any other purpose; and

(d) Such use is subject to the limitations in paragraphs (1) through (3) of this definition;

(6) Permit contractors or subcontractors performing emergency repairs or overhaul of items or components of items procured under this or a related Agreement to use the computer software when necessary to perform the repairs or overhaul, or to modify the computer software to reflect the repairs or overhaul made, provided that—

(a) The intended Awardee is subject to the non-disclosure agreement at [227.7103-7](#) or is a Government contractor receiving access to the software for performance of a Government contract that contains the clause at [252.227-7025](#), Limitations on the Use or Disclosure of Government-Furnished Information Marked with Restrictive Legends;

(b) The Government shall not permit the Awardee to decompile, disassemble, or reverse engineer the software, or use software decompiled, disassembled, or reverse

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engineered by the Government pursuant to paragraph (4) of this definition, for any other purpose; and

(c) Such use is subject to the limitations in paragraphs (1) through (3) of this definition; and

(7) Permit covered Government support contractors in the performance of Government contracts that contain the clause at [252.227-7025](#), Limitations on the Use or Disclosure of Government-Furnished Information Marked with Restrictive Legends, to use, modify, reproduce, perform, display, or release or disclose the computer software to a person authorized to receive restricted rights computer software, provided that—

(a) The Government shall not permit the covered Government support contractor to decompile, disassemble, or reverse engineer the software, or use software decompiled, disassembled, or reverse engineered by the Government pursuant to the paragraph (4) of this definition, for any other purpose; and

(b) Such use is subject to the limitations in paragraphs (1) through (4) of this definition.

w. "SBIR-OTA Data" means Technical Data or Computer Software generated under this Agreement.

x. "SBIR-OTA Data Rights" means Limited Rights for Technical Data, including computer software documentation, and Restricted Rights for computer software. SBIR-OTA Data Rights survive for five years from the completion of the project under which they were generated, at which point they will convert to perpetual Government Purpose Rights.

y. "SBIR-OTA Data Rights Protection Period" means the period during which SBIR-OTA Data Rights survive.

z. "Technical Data" means recorded information, regardless of the form or method of the recording, of a scientific or technical nature (including computer software documentation but not computer software).

aa. "Unlimited Rights" means rights to use, modify, reproduce, perform, display, release, or disclose technical data in whole or in part, in any manner, and for any purpose whatsoever, and to have or authorize others to do so.

5. Lower Tier Agreements

The Performer shall include this Article, suitably modified to identify the Parties, in all subcontracts or lower tier agreements, regardless of tier, for experimental, developmental, or research work.

ARTICLE X: EXPORT CONTROL AND FOREIGN ACCESS TO TECHNOLOGY

This Article shall remain in effect during the term of the Agreement and for five (5) years thereafter.

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1. Compliance

Each Party agrees to comply with U.S. Export regulations including, but not limited to, the requirements of the Arms Export Control Act, 22 U.S.C. § 2751-2794, including the International Traffic in Arms Regulation (ITAR), 22 C.F.R. § 120 et seq.; and the Export Administration Act, 50 U.S.C. app. § 2401-2420, including the Export Administration Regulations (15 C.F.R. Part 730, *et seq.*). Each party is responsible for obtaining from the Government export licenses or other authorizations/approvals, if required, for information or materials provided from one party to another under this Agreement. Accordingly, the Performer shall not export, directly, or indirectly, any products and/or technology, Confidential Information, Trade Secrets, or Classified and Unclassified Technical Data in violation of any U.S. Export laws or regulations.

2. Restrictions on Sale or Transfer of Technology to Foreign Firms or Institutions

A. The procedures stated in paragraphs B, C and D below shall apply to any transfer of Technology. These requirements are in addition to, and are not intended to change or supersede the laws and regulations cited in paragraph 1 of this article. For purposes of this paragraph, a transfer includes a sale of the company, and sales or licensing of Technology. Transfers do not include:

- (1) Sales of products or components; or
- (2) Licenses of software or documentation related to sales of products or components; or
- (3) Transfer to foreign subsidiaries of the Performer for purposes related to this Agreement; or
- (4) Transfer which provides access to Technology to a Foreign Firm or Institution which is an approved source of supply or source for the conduct of research under this Agreement provided that such transfer shall be limited to that necessary to allow the firm or institution to perform its approved role under this Agreement.

B. The Performer shall provide timely notice to ONR of any proposed transfers from the Performer of Technology developed under this Agreement to Foreign Firms or Institutions. If the Government determines that the transfer may have adverse consequences to the national security interests of the United States, the Performer, its vendors, and ONR shall jointly endeavor to find alternatives to the proposed transfer which obviate or mitigate potential adverse consequences of the transfer but which provide substantially equivalent benefits to the Performer.

C. In any event, the Performer shall provide written notice to the ONR AOR and

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the ONR AO of any proposed transfer to a Foreign Firm or Institution at least sixty (60) calendar days prior to the proposed date of transfer. Such notice shall cite this Article, include any relevant Department of State or Department of Commerce licenses/approvals/determinations, or cite any applicable exemptions or exclusions, and shall state specifically what is to be transferred and the general terms of the transfer. Within thirty (30) calendar days of receipt of the Performer's written notification, the ONR AO shall advise the Performer whether it consents to the proposed transfer. In cases where ONR does not concur or sixty (60) calendar days after receipt and ONR provides no decision, the Performer may utilize the procedures under Article VII, Disputes. No transfer shall take place until a decision is rendered.

D. In the event a transfer of Technology to Foreign Firms or Institutions which is NOT approved by ONR takes place, the Performer shall (a) refund to ONR funds paid for the development of the Technology and (b) the Government shall have a non-exclusive, nontransferable, irrevocable, paid-up license to practice, or to have practiced on behalf of the United States, the Technology throughout the world for Government and any and all other purposes, particularly to effectuate the intent of this Agreement. Upon request of the Government, the Performer shall provide written confirmation of such licenses.

3. Lower Tier Agreements

The Performer shall include this Article, suitably modified to identify the Parties, in all subcontracts or lower tier agreements, regardless of tier, for experimental, developmental, or research work.

ARTICLE XI: TITLE TO AND DISPOSITION OF PROPERTY

1. Title to Property

1. Title to Property

A. The Performer shall retain title to all property acquired by the Performer for use on this agreement, except for any property that is identified as a deliverable end item. Any property that is identified as a deliverable end item shall be added as an attachment to this agreement at time of acquisition by the Performer. At time of award no property is identified as a deliverable end item.

2. Government Furnished Property

At time of award no GFP is being furnished. In the event GFP will be furnished to Performer, the AO shall send written notification to Performer's Technical Point of Contact with a copy to the Business Point of Contact, and the following terms shall apply:

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A. The Government will provide the Performer with Government Furnished Property (GFP) to facilitate the effort described in Article I of this Agreement. GFP will be specifically identified in an attachment to the agreement. This GFP shall be utilized only for performance under this Agreement unless a specific exception is made in writing by the Agreements Officer.

B. The Performer shall assume the risk of and be responsible for any loss or destruction of, or damage to, any GFP while in possession or control of the Performer, with the exception of reasonable wear and tear or reasonable and proper consumption. All property shall be returned at the end of this Agreement in as good as condition as when received with the exception of said reasonable wear and tear or in accordance with this Agreement regarding its use.

C. The Performer shall obtain explicit written authorization from the Agreements Officer for any transfer or disposition of GFP.

3. Government Furnished Property

If Government Furnished Property will be utilized under the Agreement, this section shall include the guarantees (if any) the Government makes regarding the property's suitability for its intended use, the condition in which the property should be returned, and any limitations on how or the time the property may be used. Sample language is provided below.

Include an attachment that lists the property the Government will furnish for the performance of the agreement.

A. The Government will provide the Performer with Government Furnished Property (GFP) to facilitate the effort described in Article I of this Agreement. GFP is specifically identified in Attachment 4. This GFP shall be utilized only for performance under this Agreement unless a specific exception is made in writing by the Agreements Officer.

B. The Performer shall assume the risk of and be responsible for any loss or destruction of, or damage to, any GFP while in possession or control of the Performer, with the exception of reasonable wear and tear or reasonable and proper consumption. All property shall be returned at the end of this Agreement in as good as condition as when received with the exception of said reasonable wear and tear or in accordance with this Agreement regarding its use.

C. The Performer shall obtain explicit written authorization from the Agreements Officer for any transfer or disposition of GFP.

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ARTICLE XII: CIVIL RIGHTS ACT

This Agreement is subject to the compliance requirements of Title VI of the Civil Rights Act of 1964 as amended (42 U.S.C. § 2000d) relating to nondiscrimination in Federally assisted programs. The Performer has signed an Assurance of Compliance with the nondiscriminatory provisions of the Act.

ARTICLE XIII: SECURITY *(Delete the paragraph below that does not apply))***1. Unclassified Material.**

The Performer personnel will not have access to classified United States Government information under this Agreement. If security restrictions should happen to apply to certain aspects of the proposed Agreement, the Agreements Officer will inform the Performer. The Performer shall promptly notify the Agreements Officer if information is developed which might, if disclosed, affect the national security adversely. Written concurrence from the Agreements Officer must be obtained prior to disclosure of such information.

(Alternate Paragraph 1 – if Classified Material is contemplated)

1. Classified Material.

A. The Performer will require access to classified information, in accordance with the DD 254 attached to this Agreement. The Performer shall comply with the National Industrial Security Program Operating Manual (NISPOM), DoD 5220.22-M in accessing, generating, or handling classified information under this Agreement.

B. The Performer shall include this Article, suitably modified to identify the Parties, in all subcontracts or lower tier agreements, regardless of tier, that involve access to classified information. The Performer shall comply with the National Industrial Security Program Operating Manual (NISPOM), DoD 5220.22-M, regarding the issuance of DD254s permitting subcontractors/vendors to access, generate, or handle classified information under this Agreement.

2. Controlled Information

The Parties understand that information and materials provided pursuant to or resulting from this Agreement may constitute unclassified controlled or otherwise sensitive information and are protected by law, executive order or regulation. Each Party is responsible for compliance with all applicable laws and regulations. Nothing in this Agreement shall be construed to permit any disclosure in violation of those restrictions.

ARTICLE XIV: PUBLIC RELEASE OR DISSEMINATION OF INFORMATION

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1. This Article applies to unclassified technical information only. Classified information is not authorized for public release. Technical information includes information or data related to research, development, engineering, test, evaluation, production, operation, use, or maintenance of hardware, software, or technology which advances the state-of-the-art or establishes a new art in an area of significant military application. For purposes of this Article, technical information includes, but is not necessarily limited to: original papers, articles, abstracts, press releases, speeches, oral presentations, brochures, technical reports, technical documents, technical notes, letters to the editor, contractor reports, information summaries and compilations, invention disclosures, photographs, films, videotapes, slides, charts, graphs, drawings, and similar materials. All unclassified technical information generated by ONR contractors under classified awards and intended for public release is subject to review and approval as described in this Article. There shall be no dissemination or publication, except within and between the Performer and any subcontractors, of information developed under this Agreement or contained in the reports to be furnished pursuant to this Agreement without prior written approval of the AOR.

2. Contractors are responsible for ensuring that their material contains only unclassified information. If the material is intended for public release, the author's letter to the AOR shall contain information concerning the proposed media for public release, the date and location of publication or presentation, the identity of the sponsor and whether or not sponsor is aware of the proposed release, the deadline date by which approval for public release must be obtained and the ONR award number, and any other information useful for expediting the review and approval such as a copy of other agencies approval of the public release. Contractors must be aware that the material must be submitted for approval at least 60 days prior to the date required for release.

3. Following final clearance for public release, the contractor is responsible for submitting the material to the publisher or conference sponsor. The contractor must include, in a covering letter or on the material, the following statement: "This material is submitted with the understanding that right of reproduction for governmental purposes is reserved for the Office of Naval Research, Arlington, Virginia 22203-1995."

ARTICLE XV: SPECIAL PROVISIONS

1. Environmental Requirements

A. Environmental Liability. The Performer is responsible for achieving compliance with all environmental laws applicable to the work performed under this Agreement, including but not limited to any licenses and permit applications required under Federal, State, or local laws or regulations. The Performer shall not name the United States, the Department of the Navy (DON), or any other Government agency, instrumentality or employee as an owner, operator or in any other capacity on any license or permit application required under environmental laws unless written consent

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is first obtained from an authorized agent of the Federal agency or instrumentality to be named.

B. Pollution Prevention: Consideration should be given to alternative materials and processes in order to eliminate, reduce, or minimize hazardous waste being generated. This is to be accomplished while minimizing item cost and risk to item performance.

2. Safety

A. The Performer shall adhere to all local, state, and federal rules and regulations required in order maintaining a safe and non-hazardous occupational environment throughout the duration of this initiative.

Discuss whether any safety surveys are required, incorporate any safety-related FAR or DFARs clauses as desired, and address any reporting required (e.g. Accident/Incident Report, Material Safety Data Sheets (MSDS), etc.)

B. Arms, Ammunition, or Explosives (AA&E)

Include this section if AA&E are to be utilized under this Agreement. Address required safety or security surveys, applicable DoD or other guidance, reporting requirements, and any other necessary terms and conditions.

C. Requirements Concerning Use of Human Subjects (IF APPLICABLE)

(a) *Definitions.* As used in this clause—

(1) “Assurance of compliance” means a written assurance that an institution will comply with requirements of 32 CFR Part 219, as well as the terms of the assurance, which the Human Research Protection Official (HRPO) determines to be appropriate for the research supported by the Department of Defense (DoD) component (32 CFR 219.103).

(2) “Human Research Protection Official (HRPO)” means the individual designated by the head of the applicable DoD component and identified in the component’s Human Research Protection Management Plan as the official who is responsible for the oversight and execution of the requirements of this clause, although some DoD components may use a different title for this position.

(3) “Human subject” means a living individual about whom an investigator (whether professional or student) conducting research (i) Obtains information or biospecimens through intervention or interaction with the individual, and uses, studies, or analyzes the information or biospecimens; or (ii) Obtains, uses, studies,

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analyzes, or generates identifiable private information or identifiable biospecimens. (32 CFR 219.102(e)). For example, this could include the use of human organs, tissue, and body fluids from individually identifiable living human subjects as well as graphic, written, or recorded information derived from individually identifiable living human subjects.

(4) "Institution" means any public or private entity or agency (32 CFR 219.102(f)).

(5) "Institutional Review Board (IRB)" means a board established for the purposes expressed in 32 CFR Part 219 (32 CFR 219.102(g)).

(6) "IRB approval" means the determination of the IRB that the research has been reviewed and may be conducted at an institution within the constraints set forth by the IRB and by other institutional and Federal requirements (32 CFR 219.102(h)).

(7) "Research" means a systematic investigation, including research, development, testing, and evaluation, designed to develop or contribute to generalizable knowledge. Activities that meet this definition constitute research for purposes of 32 CFR Part 219, whether or not they are conducted or supported under a program that is considered research for other purposes. For example, some demonstration and service programs may include research activities (32 CFR 219.102(l)). Activities that are deemed not to be research are included at 32 CFR 219.102(l)(1-4).

(b) The Performer shall oversee the execution of the research to ensure compliance with this clause. The Performer has an ongoing obligation to protect human subjects and shall comply fully with 32 CFR Part 219 and DoD Instruction 3216.02, SECNAVINST 3900.39E CH-1, 10 U.S.C. § 980, and, when applicable, Food and Drug Administration policies and regulations.

(c) The Performer shall not commence performance of research involving human subjects that is covered under 32 CFR Part 219 or that meets exemption criteria under 32 CFR § 219.104, or expend funding on such effort, until and unless the conditions of either the following paragraph (c)(1) or (c)(2) have been met:

(1) The Performer furnishes to the HRPO, with a copy to the Agreements Officer, an assurance of compliance and IRB approval and receives notification from the Agreements Officer that the HRPO has approved the assurance as appropriate for the research under the Statement of Work, and also that the HRPO has reviewed the protocol and accepted the IRB approval for compliance with the DoD component policies. The Performer may furnish evidence of an existing assurance of compliance for acceptance by the HRPO, if an appropriate assurance has been approved in connection with previous research. The Performer shall notify the Agreements Officer immediately of any suspensions or terminations of the assurance.

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(2) The Performer furnishes to the HRPO, with a copy to the Agreements Officer, a determination that the human research proposed meets exemption criteria in 32 CFR § 219.104 and receives written notification from the Agreements Officer that the exemption is determined acceptable. The determination shall include citation of the exemption category under 32 CFR § 219.104 and a rationale statement. In the event of a disagreement regarding the Performer's furnished exemption determination, the HRPO retains final judgment on what research activities or classes of research are covered or are exempt under the Agreement.

(d) DoD staff, consultants, and advisory groups may independently review and inspect the Performer's research and research procedures involving human subjects and, based on such findings, DoD may prohibit research that presents unacceptable hazards or otherwise fails to comply with DoD procedures.

(e) Failure of the Performer to comply with the requirements of this clause will result in the issuance of either a termination of the Agreement, or in issuance of a stop-work order to immediately suspend, in whole or in part, work and further payment under this Agreement, or will result in other issuance of suspension of work and further payment for as long as determined necessary at the discretion of the Agreements Officer.

(f) The Performer shall include the substance of this clause, including this paragraph (f), in all subcontracts that may include research involving human subjects in accordance with 32 CFR Part 219, DoD Instruction 3216.02, SECNAVINST 3900.39E CH-1, and 10 U.S.C. § 980, including research that meets exemption criteria under 32 CFR 219.104. This clause does not apply to subcontracts that involve only the use of cadaver materials.

4. Preference for U.S. Flag Air Carriers

Travel supported by U.S. Government funds under this agreement shall use U.S. flag air carriers (air carriers holding certificates under 49 U.S.C. 41102) for international air transportation of people and property to the extent that such service is available, in accordance with the International Air Transportation Fair Competitive Practices Act of 1974 (49 U.S.C. 40118) and the interpretive guidelines issued by the Comptroller General of the United States in the March 31, 1981, amendment to Comptroller General Decision B138942.

5. Special Small Business Innovation Research (SBIR)

A minimum of one-half of the SBIR Project shall be carried out by the proposing firm. The primary employment of the principal investigator shall be with the small business firm at the time of award and during the conduct of the proposed effort. Primary

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employment means that more than one-half of the principal investigator's time is spent with the small business. Primary employment with a small business concern precludes full-time employment at another organization.

All research or research and development work under this contract shall be performed by the small business concern and its subcontractors in the United States. "United States" means the several states, the Territories and possessions of the United States, the Commonwealth of Puerto Rico, and the Commonwealth of the Northern Mariana Islands, the Trust Territory of the Pacific Islands, and the District of Columbia. Joint ventures and limited partnerships are permitted, provided that the entity created qualifies as a small business in accordance with the Small Business Act, 15 USC 631, and the definition included in the SBIR solicitation.

Deviations from the above requirements must be approved in writing by the Agreements Officer.

ARTICLE XVI: ORDER OF PRECEDENCE

In the event of any inconsistency between the terms of this Agreement and language set forth in the Attachments, the inconsistency shall be resolved by giving precedence in the following order: (1) The Agreement, and (2) all Attachments to the Agreement.

ARTICLE XVII: EXECUTION

This Agreement constitutes the entire agreement of the Parties and supersedes all prior and contemporaneous agreements, understandings, negotiations and discussions among the Parties, whether oral or written, with respect to the subject matter hereof. This Agreement may be revised only by written consent of the Performer and the ONR AO. This Agreement, or modifications thereto, may be executed in counterparts each of which shall be deemed as original, but all of which taken together shall constitute one and the same instrument

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**ATTACHMENT 2
REPORT AND DATA DELIVERABLE REQUIREMENTS**

[Note: This Attachment should document the requirements for technical data/software deliverables under this Agreement (similar to CDRLS in a FAR-based contract). Paragraphs (1) – (6) below may be modified or deleted as necessary for a particular effort. Paragraphs (7) and (8) should include specific requirements for additional tech data/software deliverables,]

1. REPORTS

On or before ninety (90) calendar days after the effective date of the Agreement and thereafter throughout the term of the Agreement, the Performer shall submit or otherwise provide a technical status report. One (1) copy shall be submitted or otherwise provided to the ONR AOR, one (1) copy shall be submitted or otherwise provided to the AOR and one (1) copy shall be submitted or otherwise provided to ONR AO. The report will detail technical progress to date and report on all problems, technical issues, major developments, and the status of external collaborations during the reporting period.

2. ANNUAL PROGRAM PLAN DOCUMENT

The Performer shall submit or otherwise provide to the ONR AOR, and ONR AO one (1) copy each of a report which describes the Annual Program Plan as described in Article IV.

3. SPECIAL TECHNICAL REPORTS

As agreed to by the Performer and the ONR AOR, the Performer shall submit or otherwise provide to the ONR AOR, and ONR AO one (1) copy each of special reports on significant events such as significant target accomplishments by the Performer, significant tests, experiments, or symposia.

4. MILESTONE REPORTS

The Performer shall submit or otherwise provide to the ONR AOR, and ONR AO documentation describing the extent of accomplishment of milestones. This information shall be as required by Article IV and shall be sufficient for the ONR AOR to reasonably verify the accomplishment of the milestone of the event in accordance with the SOW.

5. FINAL REPORT

(NOTE: The Final Report is included in the last milestone for the completed Agreement)

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A. The Performer shall submit or otherwise provide a Final Report making full disclosure of all major developments by the Performer upon completion of the Agreement or within sixty (60) calendar days of termination of this Agreement. One (1) copy shall be submitted or otherwise provided to the ONR AOR, one (1) copy shall be submitted or otherwise provided to the ONR AO, one (1) copy shall be submitted or otherwise provided to ONR AO (1) copy shall be submitted to the Defense Technical Information Center, Attn: DTIC-BCS, 8725 John J. Kingman Road, Suite 0944, Fort Belvoir, VA 22060-0944.

B. Prior to delivery, the Performer shall consult with the AO to determine the proper distribution statement to be included on the front page of the final report in a conspicuous place.

6. EXECUTIVE SUMMARY

The Performer shall submit a one to two page executive-level summary of the major accomplishments of the Agreement and the benefits of using the other transactions authority pursuant to 10 U.S.C. § 2371b, National Defense Authorization Act for Fiscal Year 2016 upon completion of the Agreement. This summary shall include a discussion of the actual or planned benefits of the technologies for both the military and commercial sectors. One (1) copy shall be submitted to the ONR AO.

7. DEFERRED ORDERING OF DATA *(use if Program wants right to request data either not specified in the Agreement or after the Agreement concludes.)*

In addition to Data specified elsewhere in this Agreement to be delivered hereunder, ONR may, at any time during the performance of this contract or within a period of three (3) years after acceptance of all items (other than Data) to be delivered under this Agreement or the termination of this Agreement, require delivery of any technical data or computer software generated in the performance of this Agreement or any subcontract hereunder. The Performer shall be compensated for converting the Data into the prescribed form, for reproduction and delivery. The obligation to deliver the Data of a subcontractor and pertaining to an item obtained from him shall expire three (3) years after the date the Performer accepts the last delivery of that item from that subcontractor under this Agreement. The Government's rights to use said Data shall be pursuant to the Article VIX of this contract.

8. [Specify Additional Technical Data or Software deliverables, format(s), method(s) of delivery, etc.]

ATTACHMENT 7

DEFINITIONS

There are many terms used that are unique to the SBIR Program, and the DON ADAPT SBIR BAA. The following definitions are from the statutes governing the SBIR program (primarily found at 15 USC §638), the SBA SBIR Policy Directive, the Federal Acquisition Regulation, the Defense Federal Acquisition Regulation Supplement, and the DON ADAPT BAA.

- a. Affiliate - Concerns and entities are affiliates of each other when one controls or has the power to control the other, or a third party or parties controls or has the power to control both. It does not matter whether control is exercised, so long as the power to control exists.
- b. Applicant - The organizational entity that qualifies as an SBC at all pertinent times and that submits a proposal or application for a funding agreement under the SBIR Program.
- c. Awardee - The organizational entity that receives an SBIR Phase I, Phase II, or Phase III award.
- d. Broad Agency Announcement (BAA) - A formal solicitation for proposals issued by a Federal agency that announces its research and development needs and interests in broad and selected areas, as appropriate to the agency, and requests proposals in response to these needs and interests.
- e. Commercialization - The process of developing products, processes, technologies, or services and the production and delivery (whether by the originating party or others) of the products, processes, technologies, or services for sale to or use by the Federal government or commercial (private sector) markets.
- f. Computer Software - means computer programs, source code, source code listings, object code listings, design details, algorithms, processes, flow charts, formulae, and related material that would enable the software to be reproduced, recreated, or recompiled. Computer software does not include computer databases or computer software documentation.
- g. Covered Small Business Concern - A small business concern that:
 - (1) was not majority-owned by multiple venture capital operating companies (VCOs), hedge funds, or private equity firms on the date on which it submitted an application in response to a solicitation under the SBIR program; and
 - (2) is majority-owned by multiple venture capital operating companies, hedge funds, or private equity firms on the date of the SBIR award.
- h. Essentially Equivalent Work - Work that is substantially the same research, which is proposed for funding in more than one contract proposal or grant application submitted to the same Federal agency or submitted to two or more different Federal agencies for review and funding consideration; or work where a specific research objective and the research design for accomplishing the objective are the same or closely related to another proposal or award, regardless of the funding source.
- i. Federal Agency - An executive agency as defined in 5 U.S.C. §105, and a military department as defined in 5 U.S.C. 102 (Department of the Army, Department of the Navy, Department of the Air Force), except that it does not include any agency within the Intelligence Community as defined in Executive Order 12333, §3.4(f), or its successor orders.
- j. Federal Laboratory - As defined in 15 U.S.C. §3703, means any laboratory, any federally funded research and development center, or any center established under 15 U.S.C. §§ 3705 & 3707 that is owned, leased, or otherwise used by a Federal agency and funded by the Federal Government, whether operated by the Government or by a contractor.
- k. Fixed Price – A total single cost for a defined work product or effort. The single cost includes all of the elements associated with the pricing of products or efforts for sale (e.g. labor, materials,

ATTACHMENT 7

DEFINITIONS

fringe benefits, manufacturing costs, overhead, general and administrative costs, and profits/fees). Fixed Prices once set as part of an agreement are not changed.

- l. Foreign Nationals - Foreign Nationals (also known as Foreign Persons) as defined by 22 CFR 120.16 means any natural person who is not a lawful permanent resident as defined by 8 U.S.C. § 1101(a)(20) or who is not a protected individual as defined by 8 U.S.C. § 1324b(a)(3). It also means any foreign corporation, business association, partnership, trust, society or any other entity or group that is not incorporated or organized to do business in the United States, as well as international organizations, foreign governments and any agency or subdivision of foreign governments (e.g., diplomatic missions).

"Lawfully admitted for permanent residence" means the status of having been lawfully accorded the privilege of residing permanently in the United States as an immigrant in accordance with the immigration laws, such status not having changed.

"Protected individual" means an individual who (A) is a citizen or national of the United States, or (B) is an alien who is lawfully admitted for permanent residence, is granted the status of an alien lawfully admitted for temporary residence under 8 U.S.C. § 1160(a) or 8 U.S.C. § 1255a(a)(1), is admitted as a refugee under 8 U.S.C. § 1157, or is granted asylum under Section 8 U.S.C. § 1158; but does not include (i) an alien who fails to apply for naturalization within six months of the date the alien first becomes eligible (by virtue of period of lawful permanent residence) to apply for naturalization or, if later, within six months after November 6, 1986, and (ii) an alien who has applied on a timely basis, but has not been naturalized as a citizen within 2 years after the date of the application, unless the alien can establish that the alien is actively pursuing naturalization, except that time consumed in the Service's processing the application shall not be counted toward the 2-year period.

- m. Fraud, Waste and Abuse –

- i. Fraud includes any false representation about a material fact or any intentional deception designed to deprive the United States unlawfully of something of value or to secure from the United States a benefit, privilege, allowance, or consideration to which an individual or business is not entitled.
- ii. Waste includes extravagant, careless or needless expenditure of Government funds, or the consumption of Government property, that results from deficient practices, systems, controls, or decisions.
- iii. Abuse includes any intentional or improper use of Government resources, such as misuse of rank, position, or authority or resources.

- n. Funding Agreement - Any agreement, in the case of the ADAPT BAA an Other Transaction Agreement, entered into between any Federal agency and any SBC for the performance of experimental, developmental, or research work, including products or services, funded in whole or in part by the Federal Government.
- o. Funding Agreement Officer – For the DON ADAPT SBIR BAA, the Government official authorized to sign the Other Transaction Agreement and any modifications thereto.
- p. Government Purposes - "Government purpose" means any activity in which the United States Government is a party, including cooperative agreements with international or multi-national defense organizations or sales or transfers by the United States Government to foreign governments or international organizations. Government purposes include competitive procurement, but do not include the rights to use, modify, reproduce, release, perform, display,

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or disclose technical data or computer software for commercial purposes or authorize others to do so.

- q. Innovation - Something new or improved, having marketable potential, including: (1) development of new technologies; (2) refinement of existing technologies; or (3) development of new applications for existing technologies.
- r. Intellectual Property - The separate and distinct types of intangible property that are referred to collectively as “intellectual property,” including but not limited to: (1) patents; (2) trademarks; (3) copyrights; (4) trade secrets; (5) SBIR technical data (as defined in this section); (6) ideas; (7) designs; (8) know-how; (9) business; (10) technical and research methods; (11) other types of intangible business assets; and (12) all types of intangible assets either proposed or generated by an SBC as a result of its participation in the SBIR Program.
- s. Joint Venture – Has the definition given the term in 13 C.F.R. §121.103(h).
- t. Key Individual - The principal investigator/project manager and any other person named as a “key” employee in a proposal submitted in response to a program solicitation.
- u. Limited Rights - means the rights to use, modify, reproduce, release, perform, display, or disclose technical data, in whole or in part, within the Government. The Government may not, without the written permission of the party asserting limited rights, release or disclose the technical data outside the Government, use the technical data for manufacture, or authorize the technical data to be used by another party, except that the Government may reproduce, release, or disclose such data or authorize the use or reproduction of the data by persons outside the Government if—
 - (i) The production, release, disclosure, or use is—
 - (A) Necessary for emergency repair and overhaul; or
 - (B) A release or disclosure to—
 - (1) A covered Government support contractor in performance of its covered Government support contracts for use, modification, reproduction, performance, display, or release or disclosure to a person authorized to receive limited rights technical data; or
 - (2) A foreign government, of technical data other than detailed manufacturing or process data, when use of such data by the foreign government is in the interest of the Government and is required for evaluational or informational purposes;
 - (ii) The recipient of the technical data is subject to a prohibition on the further reproduction, release, disclosure, or use of the technical data; and
 - (iii) The Contractor or subcontractor asserting the restriction is notified of such reproduction, release, disclosure, or use.
- v. Principal Investigator/Project Manager - The one individual designated by the applicant to provide the scientific and technical direction to a project supported by the funding agreement.
- w. Program Solicitation - A formal solicitation for proposals issued by a Federal agency that notifies the small business community of its R/R&D needs and interests in broad and selected areas, as appropriate to the agency, and requests proposals from SBCs in response to these needs and interests. Announcements in the Federal Register or the GPE are not considered an SBIR Program solicitation. The DON ADAPT SBIR BAA constitutes a program solicitation of the DON SBIR program.

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- x. Proof of Feasibility – For the DON ADAPT SBIR BAA, information necessary to demonstrate the existing technology with further research and modifications is likely to be able to meet the objectives and satisfy the requirements provided in the topic.
- y. Proprietary Information - Proprietary information is information that you provide which constitutes a trade secret, proprietary commercial or financial information, confidential personal information or data affecting the national security.
- z. Prototype - A model of something to be further developed, which includes designs, protocols, questionnaires, software, and devices.
- aa. Research or Research and Development - Any activity that is:
 - (1) A systematic, intensive study directed toward greater knowledge or understanding of the subject studied;
 - (2) A systematic study directed specifically toward applying new knowledge to meet a recognized need; or
 - (3) A systematic application of knowledge toward the production of useful materials, devices, and systems or methods, including design, development, and improvement of prototypes and new processes to meet specific requirements.
- bb. Restricted Rights - apply only to noncommercial computer software. For purposes of Restricted Rights, a “Covered Government support contractor” means a contractor (other than a litigation support contractor covered by DFARS 252.204-7014) under a contract, the primary purpose of which is to furnish independent and impartial advice or technical assistance directly to the Government in support of the Government’s management and oversight of a program or effort (rather than to directly furnish an end item or service to accomplish a program or effort), provided that the contractor (i) Is not affiliated with the prime contractor or a first-tier subcontractor on the program or effort, or with any direct competitor of such prime contractor or any such first-tier subcontractor in furnishing end items or services of the type developed or produced on the program or effort; and (ii) Receives access to the technical data or computer software for performance of a Government contract that contains the clause at DFARS 252.227-7025, Limitations on the Use or Disclosure of Government-Furnished Information Marked with Restrictive Legends. “**Restricted Rights**” means the Government’s rights to—
 - (i) Use a computer program with one computer at one time. The program may not be accessed by more than one terminal or central processing unit or time shared unless otherwise permitted by this contract;
 - (ii) Transfer a computer program to another Government agency without the further permission of the Contractor if the transferor destroys all copies of the program and related computer software documentation in its possession and notifies the licensor of the transfer. Transferred programs remain subject to the provisions of this provision;
 - (iii) Make the minimum number of copies of the computer software required for safekeeping (archive), backup, or modification purposes;
 - (iv) Modify computer software provided that the Government may—Use the modified software only on one computer at one time. The program may not be accessed by more than one terminal or central processing unit or time shared unless otherwise permitted by this contract. Make the minimum number of copies of the computer software required for safekeeping (archive), backup, or modification purposes; and not release or disclose the modified software except as provided in paragraphs (ii), (v), (vi), and (vii) of this provision;
 - (v) Permit contractors or subcontractors performing service contracts in support of this or a

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related contract to use computer software to diagnose and correct deficiencies in a computer program, to modify computer software to enable a computer program to be combined with, adapted to, or merged with other computer programs or when necessary to respond to urgent tactical situations, provided that—

- (A) Such contractors or subcontractors are subject to a non-disclosure agreement or are Government contractors receiving access to the software for performance of a Government contract that contains the clause at DFARS 252.227-7025 “Limitations on the Use or Disclosure of Government-Furnished Information Marked with Restrictive Legends.”
- (B) The Government shall not permit the recipient to decompile, disassemble, or reverse engineer the software, or use software decompiled, disassembled, or reverse engineered by the Government for any other purpose; and
- (C) Such use is subject to the limitations in paragraphs (i) through (iii) above.

(vi) Permit covered Government support contractors in the performance of Government contracts that contain the clause at DFARS 252.227-7025, Limitations on the Use or Disclosure of Government-Furnished Information Marked with Restrictive Legends, to use, modify, reproduce, perform, display, or release or disclose the computer software to a person authorized to receive restricted rights computer software, provided that—

- (A) The Government shall not permit the covered Government support contractor to decompile, disassemble, or reverse engineer the software, or use software decompiled, disassembled, or reverse engineered by the Government pursuant to paragraph (iv) of this clause, for any other purpose; and

- (B) Such use is subject to the limitations in paragraphs (i) through (iv) of this clause

(vii) Permit covered Government support contractors in the performance of Government contracts that contain the clause at DFARS 252.227-7025, Limitations on the Use or Disclosure of Government-Furnished Information Marked with Restrictive Legends, to use, modify, reproduce, perform, display, or release or disclose the computer software to a person authorized to receive restricted rights computer software, provided that—

- (A) The Government shall not permit the covered Government support contractor to decompile, disassemble, or reverse engineer the software, or use software decompiled, disassembled, or reverse engineered by the Government pursuant to the paragraph (iv) of this clause, for any other purpose; and

- (B) Such use is subject to the limitations in paragraphs (i) through (iv) of this clause.

- cc. SBIR Data Rights - The rights an SBIR awardee obtains in data generated during the performance of any SBIR Phase I, Phase II, or Phase III award that an awardee delivers to the Government during or upon completion of a Federally-funded project, and to which the Government receives a license.
- dd. Small Business Concern - A concern that meets the requirements set forth in 13 C.F.R. §121.702.
- ee. Subcontract - Any agreement, other than one involving an employer-employee relationship, entered into by an awardee of a funding agreement calling for supplies or services for the performance of the original funding agreement. This includes consultants.
- ff. Technical Data - means recorded information, regardless of the form or method of the recording, of a scientific or technical nature (including computer software documentation). The term does not include computer software or data incidental to contract administration, such as financial and/or management information.

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gg. Unlimited Rights - means rights to use, modify, reproduce, release, perform, display, or disclose, technical data or computer software in whole or in part, in any manner and for any purpose whatsoever, and to have or authorize others to do so.

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ACRONYMS

The following acronyms are for some common terms used by the Federal Government, Department of Defense, and Department of Navy as well as some unique terms used by the Small Business Innovation Research Program, and the Department of Navy's Accelerating Development and Acquisition of Prototype Technologies Broad Agency Announcement.

ADAPT - Accelerating Development and Acquisition of Prototype Technologies

BAA - Broad Agency Announcement

CAGE – Commercial and Government

CCR – Company Commercialization Report

C.F.R./CFR - Code of Federal Regulations

DoD - Department of Defense

DoDD – Department of Defense Directive

DoDI – Department of Defense Instruction

DON - Department of Navy

DP2 – Direct to Phase II

DUNS – Data Universal Numbering System

EAR – Export Control Regulations

FAO – Funding Agreement Officer

FFRDC – Federally Funded Research and Development Center

FWA – Fraud, Waste, and Abuse

FY – Fiscal Year

GPR – Government Purpose Rights

HF – Hedge Fund

IP – Intellectual Property

ITAR – Internal Traffic in Arms Regulation

IRB – Institutional Review Board

NIH – National Institutes of Health

OT – Other Transaction

OTA – Other Transaction Agreement

PD – Policy Directive

PEF – Private Equity Firms

PI – Principal Investigator

POF – Proof of Feasibility

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POFS – Proof of Feasibility Submission

R/R&D – Research or Research and Development

SAM – System for Award Management

SBC – Small Business Concern

SBIR - Small Business Innovation Research

SITIS – SBIR/STTR Interactive Topic Information System

STTR – Small Business Technology Transfer

TABA – Technical and Business Assistance

U.S.C./USC – United States Code

VCOC – Venture Capital Operating Companies